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TWENTY-THIRD BIENNIAL REPORT

OF THE

Oregon State Highway Commission

1957-1958

J. W. Nash

TWENTY-THIRD BIENNIAL REPORT

OF THE

Oregon State Highway Commission

For the Period July 1, 1956, to June 30, 1958

OREGON STATE HIGHWAY COMMISSION

M. K. McIVER, Chairman
ROBERT B. CHESSMAN, Commissioner
KENNETH N. FRIDLEY, Commissioner

W. C. WILLIAMS, State Highway Engineer
LEONARD I. LINDAS, Chief Counsel
FLOYD QUERY, Secretary

OREGON STATE HIGHWAY COMMISSION

Former Members and Terms

E. J. Adams, Eugene, February 28, 1917, to March 31, 1918.
W. L. Thompson, Pendleton, February 28, 1917, to Oct. 15, 1919.
S. Benson, Portland, February 28, 1917, to November 15, 1920.
R. A. Booth, Eugene, April 1, 1918, to May 28, 1923.
J. N. Burgess, Pendleton, Oct. 16, 1919, to Nov. 21, 1919.
E. E. Kiddle, Island City, November 26, 1919, to Dec. 28, 1920.
J. B. Yeon, Portland, November 22, 1920, to March 31, 1923.
W. B. Barratt, Heppner, January 8, 1921, to March 27, 1923.
Wm. Duby, Baker, March 27, 1923, to July 31, 1927.
H. B. Van Duzer, Portland, April 1, 1923, to October 7, 1931.
W. H. Malone, Corvallis, May 28, 1923, to March 31, 1927.
C. E. Gates, Medford, April 1, 1927, to March 11, 1931.
Robert W. Sawyer, Bend, August 1, 1927, to May 28, 1930.
M. A. Lynch, Redmond, May 29, 1930, to August 1, 1931.
Chas. K. Spaulding, Salem, March 11, 1931, to February 16, 1932.
Wm. Hanley, Burns, August 1, 1931, to February 16, 1932.
J. C. Ainsworth, Portland, October 8, 1931, to February 16, 1932.
Leslie M. Scott, Portland, February 17, 1932, to March 31, 1935.
Carl G. Washburne, Eugene, February 17, 1932, to Oct. 9, 1935.
E. B. Aldrich, Pendleton, February 17, 1932, to March 31, 1940.
F. L. Tou Velle, Jacksonville, October 9, 1935, to March 31, 1939.
Henry F. Cabell, Portland, April 1, 1935, to February 28, 1943.
Huron W. Clough, Canyonville, April 1, 1939, to April 7, 1943.
Herman Oliver, John Day, April 1, 1940, to March 31, 1943.
Merle R. Chessman, Astoria, April 8, 1943, to October 1, 1946.
T. H. Banfield, Portland, February 28, 1943, to March 31, 1950.
Arthur W. Schaupp, Klamath Falls, Apr. 1, 1943, to Mar. 31, 1949.
Ben R. Chandler, Coos Bay, October 1, 1946, to March 31, 1957.
Chas. H. Reynolds, La Grande, April 1, 1949, to March 31, 1958.

Present Members

M. K. McIver, Portland, appointed April 1, 1950.
Robert B. Chessman, Astoria, appointed April 1, 1957.
Kenneth N. Fridley, Wasco, appointed April 3, 1958.

Oregon Coast view from Ecola State Park near Cannon Beach, Chapman Point in foreground, Haystack Rock in upper right.

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LETTER OF TRANSMITTAL

Salem, Oregon
January 1, 1959

HONORABLE ROBERT D. HOLMES,
Governor of the State of Oregon.

Dear Sir:

In compliance with the provisions of ORS 366.485, we have the honor of presenting to you the report of the Oregon State Highway Commission for the period from July 1, 1956, to June 30, 1958.

Respectfully yours,

OREGON STATE HIGHWAY
COMMISSION,

M. K. McIVER, Chairman,
ROBERT B. CHESSMAN, Commissioner,
KENNETH N. FRIDLEY, Commissioner.

BIENNIAL REPORT

OF THE

Oregon State Highway Commission

Fiscal Years 1957 and 1958

Section One

GENERAL COMMENTS

In the paragraphs which follow, the State Highway Commission takes opportunity to comment on the below listed important features of its activities during the biennial period 1957-1958:

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Oregon's Participation in the Nationwide Federal-aid Highway Improvement Program

The Federal-aid Highway Acts of 1956 and 1958 contemplate a 13-year nationwide highway improvement program. The primary objective of this program is to bring into being a "National System of Interstate and Defense Highways", comprising some 41,000 miles of the more important through highways of the nation, and to encourage and assist in a more rapid improvement of other federal-aid highway systems (primary and secondary) by providing increased amounts of federal-aid for such highways.

The total amount involved in this 13-year program is estimated at $50 billion with $35 billion to be provided by the Federal Government and $15 billion to be provided by the states. Oregon's share in this program is estimated at $750 million with $590 million to be provided by the Federal Government and $160 million to be provided by the State.

For the first five fiscal years, the federal funds available to Oregon, the state funds required to match, and the sums of the two, are as follows:

	Fiscal Years				
	1957	1958	1959*	1960	1961
	(Amounts are in thousands of dollars)				
Federal Funds Available:					
For Interstate Highways	$15,912	$23,079	$29,509	$43,108	$43,108
For Primary FA Highways	6,358	6,441	9,514	6,790	7,320
For Urban FA Highways	1,643	1,714	2,562	1,806	1,950
For Secondary FA Highways	4,445	4,508	6,662	4,752	5,120
Subtotals	$28,358	$35,742	$48,247	$56,456	$57,498
State Funds Required to Match:					
For Interstate Highways	$ 1,768	$ 2,564	$ 2,770	$ 4,790	$ 4,790
For Primary FA Highways	4,238	4,295	5,511	4,527	4,880
For Urban FA Highways	1,095	1,142	1,484	1,204	1,300
For Secondary FA Highways	2,963	3,005	3,859	3,168	3,413
Subtotals	$10,064	$11,006	$13,624	$13,689	$14,383
Totals, Federal and State Funds:					
For Interstate Highways	$17,680	$25,643	$32,279	$47,898	$47,898
For Primary FA Highways	10,596	10,736	15,025	11,317	12,200
For Urban FA Highways	2,738	2,856	4,046	3,010	3,250
For Secondary FA Highways	7,408	7,513	10,521	7,920	8,533
Totals	$38,422	$46,748	$61,871	$70,145	$71,881

* Amounts for 1959 include special allotments of federal-aid funds and state match funds made to combat the "recession" of 1958.

The amounts shown in the Table will be used for different purposes in about the following ratios: 4 per cent for preliminary engineering and planning survey, 6 per cent for bond principal payments, 15 per cent for rights of way, 6 per cent for construction on county roads and 69 per cent for construction on state highways. For a $70 million total, such as the total for the fiscal year 1960, the amounts to be used for different purposes will be about as follows:

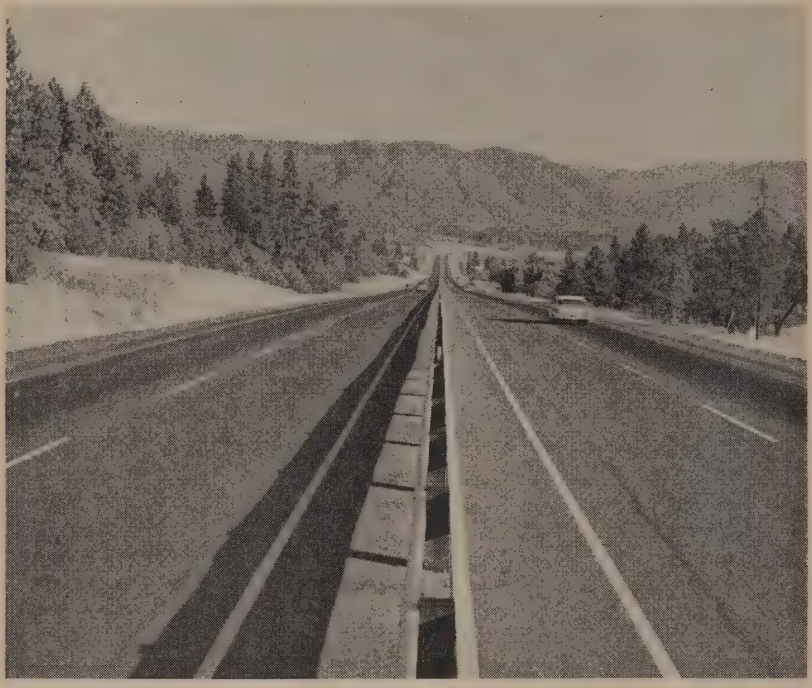
4.3	Preliminary engineering and planning survey	$ 3,000,000
5.7	Participating bond principal payments	4,000,000
15.7	Rights of way	11,000,000
5.7	Construction on county roads	4,000,000
68.6	Construction on state highways	48,000,000
		$70,000,000

Study made of the prospective incomes and prospective necessary expenditures of the Highway Department, to and through the year 1964, to ascertain whether the present highway income will or will not provide the funds required to fully match the federal funds that will be available to the State to the end of that year, indicates a probable shortage of approximately $20,000,000, or an average of approximately $4,000,000 per year for the coming five-year period 1960 to 1964, inclusive.

The federal funds available to the State will be sufficient to finance a construction program of $51,000,000 in 1960 and $58,000,000 per year from 1961 to 1964. The program for which the State can provide match funds without exceeding its income from motor vehicle revenues under present taxing rates will be about as follows: $33,000,000 in 1960 and $40,000,000 per year thereafter. From these amounts, it becomes evident that, during the five years 1960 to 1964, Oregon, unless it resorts to increased motor vehicle tax rates or to deficit financing, will fall behind in its federal-aid construction program some $90,000,000.

Road-user Imposts and Their Distribution

Road users in Oregon are presently paying road-user imposts (motor vehicle license fees, gasoline tax, motor transportation fees and fines) approximately $63,300,000, annually.



Relocated U.S. 99 over Merlin Hill north of Grants Pass in Josephine County.

Of this amount, $3,300,000 is used to defray collection and administration expenses incurred under the supervision of the Department of Motor Vehicles and the Public Utilities Commissioner. Of the remaining $60,000,000, $17,400,000 is turned over to counties and cities for use by them on county roads and city streets, and $2,300,000 is expended by the State Police in the enforcement of traffic laws and in other highway patrol duties. There remains, then, some $40,300,000 for use by the State Highway Commission.

The $40,300,000 available to the Highway Commission is utilized roughly as follows:

Maintenance of highways	$13,400,000
Operational expense	3,100,000
Administration	2,800,000
Parks	1,800,000
Buildings and equipment	1,500,000
Debt service	7,200,000
Surveys not eligible for federal-aid	400,000
Miscellaneous	225,000
Minor betterments	925,000
Rights of way not eligible for federal-aid	600,000
Construction not eligible for federal-aid	850,000
Balance available to match federal-aid	7,500,000
	$40,300,000

The $7,500,000 listed above as the balance available to match federal-aid is the difference between the total of revenue available from road-user imposts and the total of expenditures for purposes other than federally aided construction, surveys and rights of way. It is not the amount needed to match federal-aid.

In addition to the $7,500,000 of road-user funds that are available to match federal-aid, the Highway Commission has available for matching purposes $800,000 of county match funds and $2,200,000 of federal funds, the latter representing reimbursement for bond moneys spent by the State on federal-aid highways in past years. Thus the amount annually available to the Commission, from all sources, for the matching of federal-aid is approximately $10,500,000.

The amount needed to match federal-aid during the five years 1960 to 1964, inclusive, is estimated at $72,900,000 or $14,500,000 per year. Thus it is indicated that the State's income for highway purpose is short some $4,000,000 per year of being sufficient to match the federal-aid that is available to it under recent federal legislation. The matching of federal-aid during the years 1958 and 1959 was made possible by the $8,000,000 bond issue authorized for the purpose by the State Legislature of 1957.

$8,000,000 and $12,600,000 Bond Issues

Two issues of state highway bonds were authorized by the State Legislature at its 1957 session; one in the amount of $8,000,000 to supplement current revenues in the matching of federal-aid and the other in the amount of $12,600,000 to be used in building a unit of new highway on U. S. Route 101 between Gold Beach and Brookings.

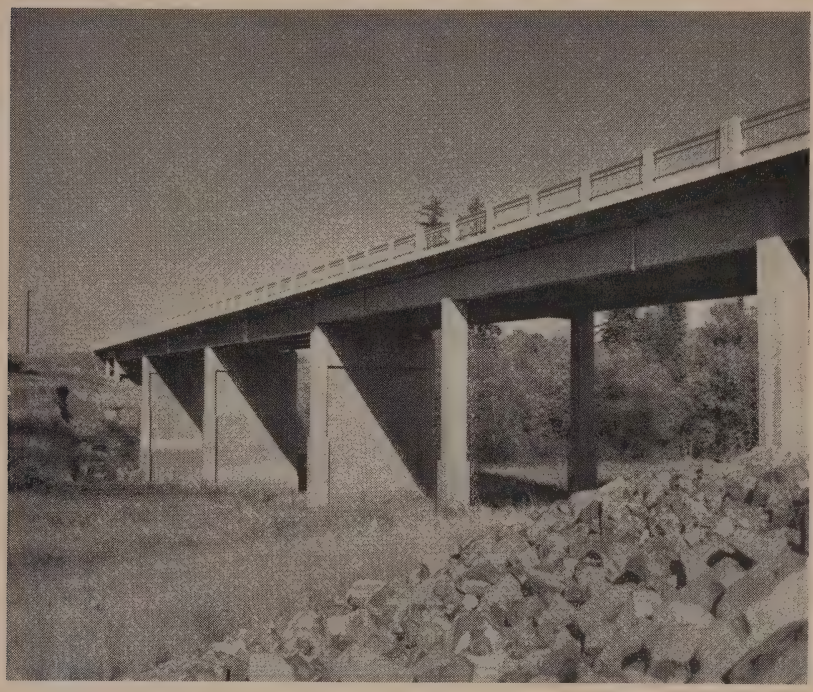
The issues referred to were sold as one issue of $20,600,000 on October 1, 1957, under the following terms:

Date of issue	November 1, 1957
Interest rates	2¾ and 3 per cent
Net proceeds	$20,205,801.03
Effective interest rate	3.17261 per cent

Schedule of Principal and Interest Payments

Calendar Year	Principal Payment	Interest Payment	Total Payment	Bonds Outstanding at End of Year
1958	$	$ 613,000.00	$ 613,000.00	$20,600,000.00
1959		613,000.00	613,000.00	20,600,000.00
1960	1,000,000.00	613,000.00	1,613,000.00	19,600,000.00
1961	1,000,000.00	585,500.00	1,585,500.00	18,600,000.00
1962	1,000,000.00	558,000.00	1,558,000.00	17,600,000.00
1963	1,000,000.00	528,000.00	1,528,000.00	16,600,000.00
1964	1,000,000.00	498,000.00	1,498,000.00	15,600,000.00
1965	1,500,000.00	468,000.00	1,968,000.00	14,100,000.00
1966	1,500,000.00	423,000.00	1,923,000.00	12,600,000.00
1967	1,500,000.00	378,000.00	1,878,000.00	11,100,000.00
1968	1,500,000.00	333,000.00	1,833,000.00	9,600,000.00
1969	1,600,000.00	288,000.00	1,888,000.00	8,000,000.00
1970	1,600,000.00	240,000.00	1,840,000.00	6,400,000.00
1971	1,600,000.00	192,000.00	1,792,000.00	4,800,000.00
1972	1,600,000.00	144,000.00	1,744,000.00	3,200,000.00
1973	1,600,000.00	96,000.00	1,696,000.00	1,600,000.00
1974	1,600,000.00	48,000.00	1,648,000.00	
	$20,600,000.00	$ 6,618,500.00	$27,218,500.00	

Plans for the use of the $12,600,000 to be expended on U. S. Route 101, call for the grading and paving of the 15-mile unit extending from Brookings north to a point known as Burnt Hill, ten miles south of Gold Beach. The new construction is to parallel the ocean shore at much lower elevation than does the existing highway and is to be free of heavy grades and



Dayton Bridge over Yamhill River on relocated Three Mile Lane Highway in Yamhill County.

sharp curvature. The roadway is to carry a 22-foot pavement with rock shoulders of 8-foot width.

The first construction contract was awarded on January 1, 1958. As of September 30, 1958, all of the grading part of the work, estimated to cost $8,400,000, is under contract and in process of performance. Contracts for the paving work will be let early in 1959. Opening of the project is scheduled for the fall of 1960. Whatever part of the $12,600,000 of bond funds may not be required to complete the Burnt Hill-Brookings Section will be used on work between Gold Beach and Burnt Hill.

Construction Program

In the schedules below are shown the amounts of highway construction that may be contracted by the Highway Commission during the years 1959, 1960 and 1961 without obligating

state funds beyond the amounts that will be available for highway construction under present rates of motor vehicle taxation; showing, also, the expenditures that such contracting will entail.

	1958	1959	1960	1961
	(Amounts are in thousands of dollars)			
Contracting:				
FA Interstate Projects	$38,400	$34,200	$21,200	$24,000
FA Noninterstate Projects	25,100	15,000	11,900	15,900
Bond Projects	7,800	4,100	.....	.....
State Construction Projects	1,000	850	850	850
Totals	$72,300	$54,150	$33,950	$40,750
Expending:				
FA Interstate Projects	$18,000	$43,250	$28,000	$24,150
FA Noninterstate Projects	13,150	27,050	13,900	14,350
Bond Projects	4,150	6,300	3,000	.....
State Construction Projects	530	750	850	850
Totals	$35,830	$77,350	$45,750	$39,350

If state funds for the matching of federal-aid were to be increased by approximately $4,000,000 per year, beginning with 1960, the amounts of construction to be contracted could be increased by approximately $8,000,000 in 1959 and by approximately $18,000,000 in each of the years 1960 and 1961.

Interstate Highway System

The "National System of Interstate and Defense Highways", commonly referred to as the Interstate Highway System, comprises 41,000 miles of the nation's more important through highways. Of this system 731 miles are within the State of Oregon.

Oregon's part of the system comprises three main highways; the Pacific Highway (US 99) extending north and south completely across the State; the Upper Columbia River Highway and Old Oregon Trail Highway extending from Portland east to the Idaho Boundary near Ontario; and the Umatilla-Stanfield Highway extending from the Washington Boundary near Umatilla south to the Old Oregon Trail near Stanfield. In addition, it includes four penetrating spurs and loop routes

serving the cities of Portland, Salem and Eugene. The complete list is as follows:

Interstate Route No.	Route Name	Miles
5	Pacific Highway (US 99)	310
80N	Upper Columbia River Highway and Old Oregon Trail Highway (US 30)	376
82	Umatilla-Stanfield Highway	14
105	Eugene Spur	3
205	Laurelhurst Loop (In Portland)	22
305	Salem Spur	3
405	Stadium Loop (In Portland)	3
		731

As a part of a nationwide thirteen-year highway improvement program described elsewhere herein, the Federal Government has laid plans for the building of this 41,000 mile system of highways and has authorized road-user taxes in amounts which, together with nominal aid from the states, are expected to be sufficient to finance such building.

The plan calls for freeway type of construction, with fully controlled access, separated roadways, and complete grade separation at all railroads and cross roads and with capacity sufficient to meet the needs of 1975. The cost is to be borne, 90 per cent by the Federal Government and 10 per cent by the states.

The cost to construct Oregon's portion of the Interstate System to the standards prescribed is estimated at $650,000,000.

Progress in the Building of Oregon's Portion of the Interstate Highway System

As of September 30, 1958, there has been let to contract for construction on Oregon's Interstate Highways, under the new Interstate Highway Program, a total of $52,800,000; there has been expended for construction work performed, $23,215,000 and for rights of way, $5,800,000. The total of the amounts expended and the amounts remaining to be expended under contracts let as of September 30 was $58,600,000, which is 88 per cent of the maximum possible ($66,163,000) within the limit of federal funds available to the State for the purpose to August 1, 1958.

Construction work performed or under contract to September 30, 1958, under the new program, consisted of 144 miles

Twin Bridges over S. Umpqua River on U.S. 99 south of Myrtle Creek in Douglas County.

of grading, 96 miles of paving and $12,800,000 of structural work.

At the beginning of the new program in August of 1956, 47 miles of the Interstate System in Oregon were completed to prescribed Interstate standards. As of the end of the 1958 construction season the completed mileage had increased to 84, the completed sections being as follows:

Interstate Route 5:	Miles
Tigard Junction to North Salem Interchange	35.3
Battle Creek, south of Salem, to junction north of Jefferson	5.6
Roseburg By-Pass	2.6
Roberts Mountain Summit south of Roseburg	1.2
Myrtle Creek to Canyonville	9.5
Jumpoff Joe Creek to Grants Pass	8.8
	63.0
Interstate Route 80 N:	
Union Avenue (Portland) to Troutdale	13.5
West Unit, Shogren to Rowena	3.2
Chenoweth Creek to The Dalles	1.9
Baker County Line (south of Huntington) to Olds Ferry	2.3
	20.9

Approximately 100 additional miles have been improved to meet access control and grade separation requirements but, as yet, lack two of the four lanes of travel width required for full completion.

State Parks

The Highway Commission has directed a continuing program of state park improvements designed to accommodate the growing number of visitors utilizing these areas. New parks and enlarged facilities are being developed so that the public may be adequately provided with facilities to enjoy the scenic and recreational attractions of Oregon.

In earlier days, during the quarter of a century prior to 1950, the Commission's park program was mainly one of acquisition. In this period, the emphasis was upon acquiring areas which preserved representative beauty and park attractions of the state in the public interest. Many of these areas were left undeveloped, having been acquired for future need.

Since 1950, the Highway Commission has placed the major emphasis of the park program upon development and utilization of park lands. Enlargement of day use facilities and the provision of overnight camping facilities since that time have brought about greater enjoyment of the recreation these areas afford. New acquisitions have also been made but particularly with anticipated use in mind. The public has shown a remarkable response to this program and great increases in day use and overnight camping attendance have been made each year since the program was initiated.

The policy of the past two years has been a continuation of this development program with special emphasis upon current trends. The increased popularity of water associated recreation such as pleasure boating, water skiing, fishing, and beach bathing has made necessary the construction of boat launching ramps and the development of new access and park facilities at areas providing heavily used water frontage or beaches. Over 650 camping sites and the related facilities have been added to meet the trend in camping popularity.

A new addition to the Parks program in 1957 was the

Columbia River Beach at Rooster Rock State Park on U.S. 30 23 miles east of Portland in Multnomah County.

appointment of a six-member Parks Advisory Committee comprised of laymen from various sections of the state. This committee, acting through the State Parks Superintendent in an advisory capacity to the Highway Commission, is performing a valuable service by making a broader insight possible into matters of park policy, land acquisition and development, and other problems relating to the park field. The members of this committe are as follows: William M. Tugman, Chairman, Reedsport; George M. Henderson, Portland; Glenn Jackson, Medford; Robert B. Frazier, Eugene; Alfred D. Collier, Klamath Falls; and V. W. McCormack, Pendleton.

In the acquisition, improvement and operation of state parks, expenditures during 1958 will approximate $1,650,000. For the same purposes during 1959, there has been budgeted $1,800,000.

Use of Electronic Computer

In order to cope with the greatly expanded operations provided for in the National Highway Act of 1956, it has become mandatory for more efficient use of all personnel involved in highway design, construction and operation. To this end the Highway Department has installed in its Salem office an electronic computer of the magnetic drum type. This machine has greatly aided and expedited the analysis and processing of large masses of data as well as having relieved the engineering forces of large amounts of complex and tedious calculation work.

As an example of the burden being assumed by this machine, an estimated ninety per cent of all structural design computations are now being processed on the computer. Other applications include calculation work in connection with roadway design, earthwork, soil mechanics, statistical analyses for traffic engineering, and contract bid tabulations.

Although the computer was primarily obtained to perform engineering calculations, it has enabled the Department to simplify and speed up the processing of large masses of data previously done on other machines. As an example, the preparation of motor vehicle traffic analysis tables is now done in one tenth of the machine time previously required. Similar time and labor savings are reflected in other applications of the computer. The computer also permits more comprehensive and exhaustive analysis techniques resultant in more highly developed design and decreased construction costs. This latter factor, while being less readily apparent than engineering man-hours saved, is an even more significant saving. New procedures for the machine are constantly being developed to further expand the labor saving capabilities of the machine.

Section Two

REPORT

OF THE

State Highway Engineer

TO THE

State Highway Commission

OF THE

STATE OF OREGON

1957-1958

W. C. WILLIAMS, State Highway Engineer

The Three Sisters and Broken Top snowcapped mountains, from Dutchman's Flat west of Bend in Deschutes County.

LETTER OF TRANSMITTAL

Salem, Oregon
January 1, 1959

To the Honorable State Highway Commission,
M. K. McIver, Chairman,
Robert B. Chessman, Commissioner,
Kenneth N. Fridley, Commissioner.

Gentlemen:

I have the honor to submit to you herewith the report of the State Highway Engineer for the period July 1, 1956, to June 30, 1958.

Respectfully yours,

W. C. WILLIAMS,
State Highway Engineer.

Section Two

REPORT OF THE
State Highway Engineer
TO THE
State Highway Commission
1957-1958

INTRODUCTION

In this section of the report are given, first, an outline of the progress made in highway improvement during the biennium; second, descriptions of the several classes and systems of the highways with which the Department has to deal; third, a discussion of the Department's finances, its sources of income, the amounts of its income and the amounts of its expenditures; and fourth, reports by some of the subdivisions of the department's organization on the activities of those subdivisions. The subjects mentioned will be found under subheads as follows:

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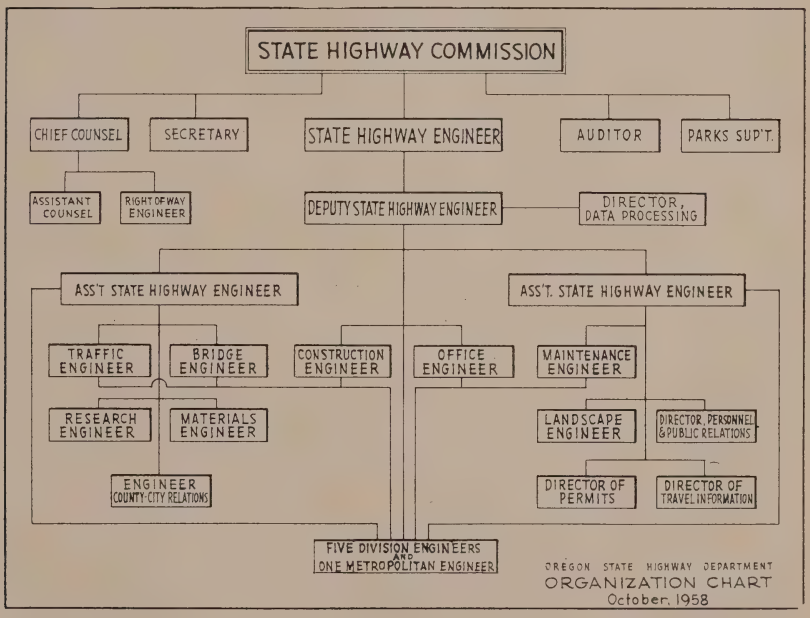
Stanton Blvd. Interchange north of Ontario, U.S. 30 in Malheur County.

HIGHWAY DEPARTMENT ORGANIZATION

Administrative Organization

At the head of the administrative organization of the Highway Department is the State Highway Commission composed of three Commissioners appointed by the Governor. Principal executive officers under the Commision are the State Highway Engineer, the Chief Counsel, the Secretary, the Auditor and the State Parks Superintendent. Executive officers serving under the State Highway Engineer are the Deputy State Highway Engineer and two Assistant State Highway Engineers. Executive officers serving under the Chief Counsel are the Assistant Counsel and the Right of Way Engineer.

Under the executive officers mentioned, the organization is subdivided into divisions as indicated in the accompanying organization chart.



Field Engineering Organization

In the performance of the field duties incidental to the supervision and direction of the construction, maintenance and operation of state highways, there are five Division Engineers and one Metropolitan Engineer.

Each division engineer supervises and directs the survey work, construction work and maintenance work on state highways within one of the five divisions into which the state is divided for the purpose. He acts also as the local representative of the State Highway Department in dealing with county officers, contractors, and the public in general. The Metropolitan Engineer supervises and directs the survey work and construction work on state highways within the metropolitan area of which the city of Portland is the center.

Headquarters of the five Division Engineers are located at Portland, Salem, Roseburg, Bend and La Grande. The headquarters of the Metropolitan Engineer are at Portland.

Engineering service for construction projects is provided by resident construction engineers working under the supervision of the Division Engineer or the Metropolitan Engineer. Each resident engineer is in charge of one or more contract jobs and his duties are to lay out the work to be done, to direct the contractor in his work, to measure the quantities of work for which the contractor is entitled to payment, to inspect the workmanship and materials to insure compliance with specifications, and to otherwise look after the interests of the state as they may be involved.

Highway maintenance within the division is directed by district maintenance superintendents working under supervision of the division engineer, each maintenance superintendent confining his activities to highways within the "district" assigned to him.

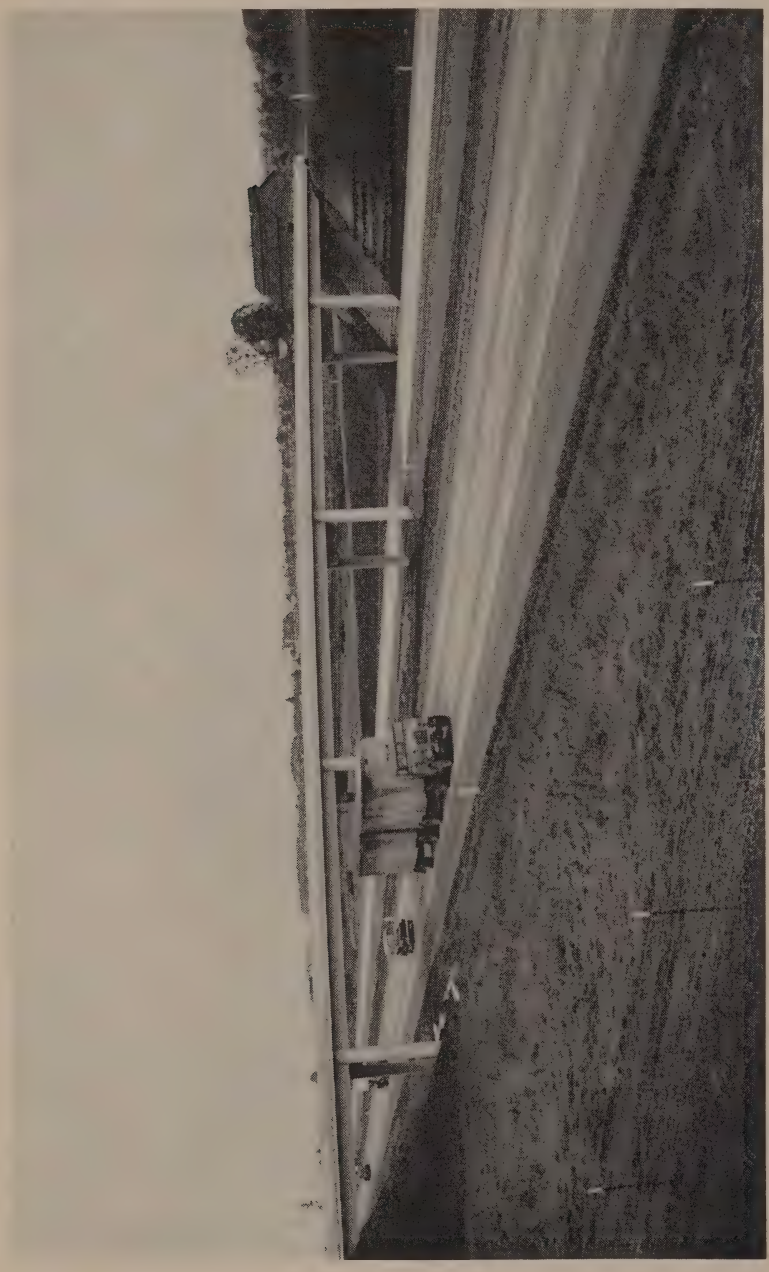
In the state as a whole there are 19 district maintenance superintendents. Under them are 133 section maintenance crews engaged in the routine maintenance of the highways. In addition there are a variable number of extra gang crews engaged in specialized and extraordinary work such as re-

moving snow, removing slides, patching pavements, and repairing bridges. Duties of the district superintendents are, in general, to see that the proper materials and equipment are supplied, to supervise the work of the section crews and extra gangs, to keep an accurate account of the expense incurred, and in all respects to look after the upkeep of the highways within their respective territories.

Equipment and Supplies Department

To handle the distribution, servicing and repairing of the equipment used by the Highway Department in the maintenance of the State's highways and to take care of the warehousing and distributing of various materials, supplies and parts required, the Highway Department operates equipment shops and storerooms at Salem, Coquille, Bend, Klamath Falls and La Grande, with the shops and warehouses at Salem being operated as the headquarters installation.

The Equipment and Supplies Department is operated as a part of the Maintenance Division of the Highway Department and its activities are directed by a Highway Equipment Superintendent working under supervision of the Maintenance Engineer. In local charge at each of the five shop-storeroom installations is an Automotive Shop Superintendent.



Viewcrest grade separation structure over reconstructed U.S. 99 north of Albany in Linn County.

PROGRESS IN HIGHWAY IMPROVEMENT

During the 1957-1958 period covered by this Report, the State Highway Department has experienced heavier demands on its functions than at any other time since creation of the Commission in 1917. The period has been one of unusual expansion, activity and accomplishment.

Public awakening to the importance of modern highways to the State and to the nation has been evidenced at the national level by the creation in 1956 of a "National System of Interstate and Defense Highways", involving improvement to high standards of a network of some 41,000 miles of important highways throughout the country, 731 miles of which are in Oregon and comprise all of US 99, that portion of US 30 which extends easterly from Portland, the new Umatilla-Stanfield highway, and spurs and loops at Portland, Salem and Eugene. Considerable progress has been made in improving these federal interstate and defense highways in Oregon during the biennium, as will be brought out more fully later in this article and elsewhere in this report.

The economic growth of Oregon places continuing demands for the improvement of the roads of the State, nearly 7,500 miles of which come under the direct jurisdiction of the State Highway Department. The meeting of these multiplying demands is a monumental task complicated by many factors. As population shifts from one area to another, as industry expands, as resources are developed, as recreational pursuits increase; greater use of our routes of travel developes and attention is focused on the need of constantly improving such routes to provide faster and safer transport. The impact of these developments on the Highway Department's activities has been great during the past two years.

This article deals with the efforts made and the work accomplished by the Highway Department during the biennium in meeting local, state and national demands for the development and improvement of the State's road systems.

During 1957 and 1958, some 302 separate construction projects have been completed under the supervision of the Highway Department and 14 Federal Forest Road construc-

tion projects have been finished under the supervision of the U. S. Bureau of Public Roads. These 316 projects were distributed over two federal interstate highways, 34 primary state highways, 35 secondary state highways, 92 county roads, and some 42 city streets not on the state highway systems. At least one of these projects occurred in each of the State's 36 counties.

The mileages of work completed during the biennium under the Department's supervision are given in accompanying Table I.

TABLE I

Work Completed in 1957 and 1958

Classification of Work	Federal-aid Interstate Highways (Miles)	Other Primary Highways (Miles)	Secondary Highways (Miles)	Other Roads and Streets (Miles)	Totals (Miles)
Bituminous Paving	47	134	37	55	273
Portland Cement Paving	9	.....	.....	.....	9
Oil Mat Surfacing	1	104	109	145	359
Stone Surfacing	57	136	111	131	435
Grading	88	117	88	108	401
Totals of above (miles)	202	491	345	439	1,477
Bridges and Grade Separation Structures (number of)	75	34	16	50	175

In addition to the above, the 11 projects performed on the State's highways as Forest Road construction projects, supervised by the U. S. Bureau of Public Roads, involved eight miles of bituminous paving, 15 miles of oil mat surfacing, 18 miles of stone surfacing, 29 miles of grading and three bridges on primary state highways, and four miles of oil mat surfacing, four miles of stone surfacing and 15 miles of grading on secondary state highways.

At the close of 1958, the status of improvement of the state highway systems under the jurisdiction of the State Highway Department is as set forth in accompanying Table II.

TABLE II

Status of Improvement of Highway Systems

Type of Improvement	Primary Highways (Miles)	Secondary Highways (Miles)
Concrete Pavement	233	64
Bituminous Pavement	1,468	552
Bituminous Macadam Surface	1,050	95
Oil Mat Surface	1,921	1,392
Rock or Gravel Surface	78	485
Graded Only	15	13
Unimproved	55	57
Totals	4,820	2,658

A detailed breakdown of the above summary of the status of improvement of the several highway systems is given in Tables 29 to 33, inclusive, in Section Three of this report. This breakdown details the state of improvement of each of the 58 primary state highways, the 134 secondary state highways, and certain roads and streets other than those on state highway systems. It portrays, in a general way, the present condition of the highways in Oregon. It indicates that on the state primary system, comprising 4,820 miles of roadways, some 4,672 miles or 97 per cent are in the status of oiled or higher types of riding surface, that on the state secondary system, comprising 2,658 miles of roadways, some 2,103 miles or 79 per cent are in a similar state of improvement, and that more than 90 per cent of the roadways on the combined systems of highways under jurisdiction of the Highway Department afford travel on oiled or paved surfacings.

During the two-year period covered by this report, the construction of over 636,000 feet of guard rail and 340,000 feet of double rail median barrier has been undertaken and 283 miles of right of way fence has been contracted. Some 58 county road grade crossings have been eliminated on the highways by construction of new structures and approaches,

seven railroad grade-crossings have been eliminated by separation structures, and many equipment and stock passes have been built to avoid the crossing of the highways at grade by agricultural equipment and livestock. At three major intersections of two or more heavily traveled routes, traffic interchanges have been built to provide for the safe flow of traffic at reasonable speeds. These features, as well as many others, are utilized by the Department to make the highways safer and more enjoyable to use.

The widening of the main highways to provide divided multilane traveled ways is a major trend. The national interstate highways are to be brought to this status throughout. Modern highway design calls not only for multiple travel lanes, but also for light curves, easy grades, long sight distances, good signing, and other provision for the free and safe movement of the traveling public. Every highway construction project completed during the biennium has been designed and constructed to contribute to the general usefulness of the Oregon road system.

A recital of the major projects completed during 1957 and 1958 follows.

Federal-aid Interstate Highways

In view of the magnitude of the highway construction involved in bringing Oregon's part of the national system of interstate highways to the modern standards planned for these multilane freeways, a separate recountal of the projects undertaken thereon during the biennium seems in order. Brief descriptions of these projects follow:

Pacific Highway, Interstate Route 5: Thirty-nine projects were completed during the 1957-1958 biennium on this highway which extends from the California State Line about 17 miles south of Ashland to the Washington State Line north of Portland.

A new section of four lane highway 8.78 miles in length between Jumpoff Joe Creek and Grants Pass was paved and opened to traffic during the biennium. Included in this section was the construction of six highway structures.

Reconstructed U.S. 99 north of Canyonville in Douglas County.

Between Myrtle Creek and Canyonville, eleven projects were completed involving the construction of 12 structures and 9.09 miles of four lane highway grading and paving. This section of highway, completed in 1958, is built to the latest interstate standards of design and by-passes both Myrtle Creek and Canyonville along the west bank of the South Umpqua River.

One project involved the paving of 6.83 miles of the highway from Shady to Booth Ranch, south of Roseburg. This route follows new alignment over Roberts Mountain and is basically a two-lane highway with three-lane sections on the ascending grades and a four-lane section at the summit of the mountain.

The highest concentration of activity on this highway during the two-year period occurred on the 35.4 mile section between the Hayesville Interchange just north of Salem and

Saddle Butte, 11 miles south of Albany. North of Albany the route follows the present highway and Salem By-Pass, and involves widening to divided four-lane status. South of Albany the highway is to be on entirely new alignment lying approximately 2½ miles east of the present route and is to be of the divided four-lane design. Completed during 1957 and 1958 under 16 separate contracts, were 16.7 miles of grading, 2.4 miles of asphaltic concrete paving, 9.1 miles of portland cement concrete paving, and 39 structures for stream crossings and intersecting road separations. As a result of this work, traffic now is benefitting from use of the modernized four-lane highway for a distance of 13.7 miles between Battle Creek Junction, about five miles south of Salem, and the Murder Creek Interchange, about two miles north of Albany; except for a short section of two-lane travelled way at the crossing of the Santiam River where a new structure is still under construction. On the new route near Albany and south thereof, the grading work has been completed to a point near Saddle Butte, a distance of about 14 miles and the construction of structures and paving is either now underway or planned for construction in the near future.

Another section of highway on which grading work was completed in 1958 was the section of the Baldock Freeway in Portland between S. W. 14th Avenue and the Washington County Line. This 2.48 miles of highway is planned to carry six lanes of traffic.

At the north end of the highway at the Interstate Bridge 0.42 miles of six-lane roadway was paved between the recently widened bridge over the Oregon Slough and the new Interstate Bridge. This new work greatly relieves the old narrow and congested area adjacent to Jantzen Beach Park and will serve the dual bridges upon completion of the work now underway on the old bridge.

Columbia River Highway, Interstate Route 80N: Twelve contracts were completed on this highway during the 1957-1958 biennium. The federal interstate portion of this highway begins in Portland at the junction with Interstate Route 5 (Pacific Highway) and extends east to the junction with the Old Oregon Trail Highway near Boardman.

Between Union Avenue and 42nd Avenue on the Banfield Freeway portion of the Columbia River Highway in Portland, 2.06 miles of six-lane highway and connections were paved and opened to traffic. Included in the work was the construction and remodeling of six highway structures. Completion of this section carried traffic to temporary connections with Union Avenue and Grand Avenue near the Burnside Bridge over the Willamette River.

Two grading projects 7.84 miles in length were completed between Troutdale and Rooster Rock Park. This work widened the present highway to four lanes, the paving of which is planned for completion during the next biennium.

Between Mosier and Rowena, 3.13 miles has been widened to four lanes and paved. This section of highway is one of the first to be completed to interstate standards east of Multnomah County. It by-passed the narrow winding section of highway which follows along the top of the cliff. Widening the east unit of this section to four lanes is scheduled to be done during the next biennium.

From Chenoweth Creek to The Dalles 1.88 miles of four-lane highway was paved and opened to traffic.

Old Oregon Trail Highway, Interstate Route 80N: Seven projects were completed on this highway which begins near Boardman in Morrow County at the junction with the Columbia River Highway and ends at the Snake River at Ontario.

Between Emigrant Hill and Deadmans Pass 3.07 miles of highway was paved and opened to four-lane traffic, by-passing a narrow winding portion of the old highway.

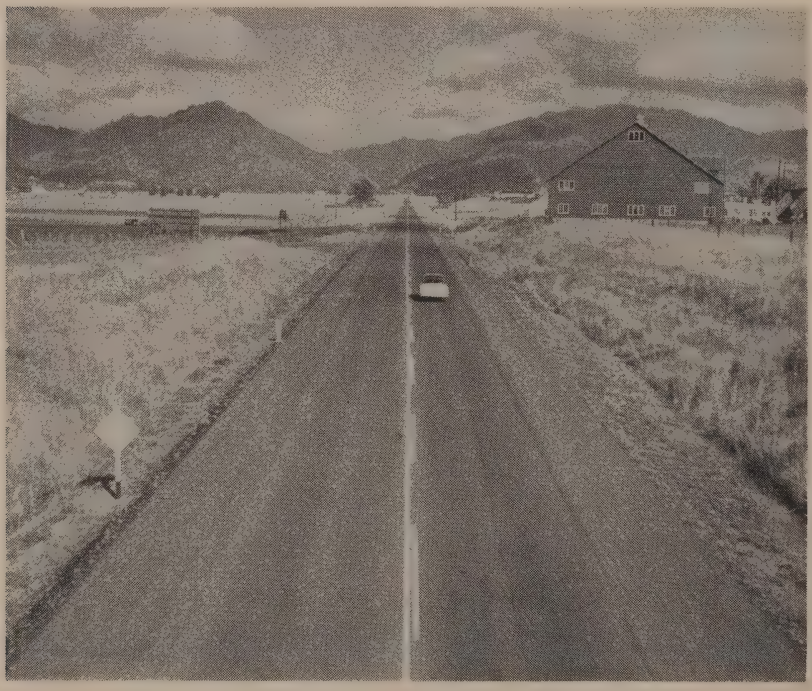
From Meacham to Glover, a distance of 10 miles, a new four-lane route has been graded and paving has already commenced but will not be completed until 1959. In this same piece, three structures were built to carry traffic over a railroad and two county roads.

Between the Baker-Malheur County Line and the junction of the Olds Ferry-Ontario Highway, six miles southeast of Huntington, 2.33 miles of four-lane highway was graded and paved on improved grade and alignment. Early work on this portion of the highway was necessary because of the reservoir being formed by the Brownlee Dam.

Primary State Highways

Of the 58 primary state highways in the state, all of the Pacific Highway, most of the Old Oregon Trail Highway and part of the Columbia River Highway are also on the federal-aid interstate highway system and are to be relocated, widened and otherwise improved to conform to the high design standards established for that system. On the primary state highways which are not a part of the ultimate federal-aid interstate highway system, there have been 88 projects completed during the 1957-1958 period. Brief descriptions of these projects, emphasizing their contribution to the improvement of travel thereon, follow.

Pacific Highway West, U. S. 99W: Five projects have been completed on this highway which extends from the junction of Denver and Union Avenues north of Portland,



Relocated Tillamook-Donaldson Creek Section of Wilson River Highway in Tillamook County.

through McMinnville, Junction City and Eugene to Judkins Point.

One project involved the construction of two grade separation structures over Harbor Drive and the construction and improvement of existing roadways between S. W. Morrison and S. W. Jefferson Streets along Harbor Drive. This project was designed to eliminate all left turn movements off Harbor Drive and also, to eliminate all traffic signals on Harbor Drive in the vicinity of the work.

Another project called for the construction of an additional two-lane roadway to provide a separated four-lane highway from the Tualatin River to a junction with the county road to Middleton with acceleration and deceleration lanes provided for off and on traffic and a new concrete structure at Onion Flat.

On the Whiteson Section 0.50 mile of highway was relocated to the west of the present travelway and a concrete and timber bridge constructed over the draw at the south end of the project eliminating the hazardous dip in grade and sharp curvature of the old route.

In McMinnville, Adams Street was reconstructed together with necessary connections to provide a one-way couplet through the city from the intersection of Baker and 17th Streets south on Adams to a point just southerly of the crossing of Cozine Creek. This project was designed to alleviate traffic congestion through the city.

Another project called for the construction of a new concrete overflow bridge about five miles south of Monmouth to provide a relief opening during high water.

Pacific Highway East, U. S. 99E: On this route, which extends from Denver Avenue in Portland southerly through Oregon City, Canby and Salem to Battle Creek Junction, Hancock and Stephens Streets in Portland were widened and paved between Union and Grand Avenues to provide a one-way couplet (northbound traffic on Grand Avenue and southbound traffic on Union Avenue) to relieve traffic congestion and speed up traffic in this area; also Grand Avenue was resurfaced with asphaltic concrete between Multnomah and Hancock Streets.

Pacific Highway, U. S. 99: Three projects on the noninterstate portion of this route were completed during 1957 and 1958.

One project involved widening and extending Seventh Street in Grants Pass from Savage Street north to a junction with Morgan Lane, and the construction of a connection between Sixth and Seventh Streets just south of "M" Street to provide a one-way couplet and relieve the highway traffic load through the city.

From the Josephine County Line to the junction of this highway with a County Road to Rogue River, the existing highway was widened and the grade raised to prevent flooding over the highway at low points, and 2.11 miles of black top paving placed to complete the improvement.

A 1.11 mile section of this highway between the S. P. R. R. Undercrossing just north of Ashland and Helman Street in the City of Ashland, has been widened and resurfaced with asphaltic concrete pavement to provide a four-lane highway throughout the City of Ashland.

Columbia River Highway, U. S. 30 and 730: Five projects were completed during the 1957-1958 construction seasons on the noninterstate portions of this highway from Astoria to its junction with Interstate Highway No. 5 in Portland and from Boardman to the Washington State Line, 21 miles northeast of Umatilla.

Between Bradley Park and the junction of the Columbia River Highway with the Wauna County Road, a distance of 2.62 miles, the highway was constructed on an entirely new alignment eliminating several "hairpin turns" (known as Bugby Loops) thereby saving 0.9 mile of distance and considerable driving time, and contributing to the safety of highway travel. An additional lane has been provided on ascending grades for slow moving vehicular traffic.

During the biennium about 3.74 miles of this highway was reconstructed between Goble and Tide Creek. Construction was on improved alignment and grade with a new reinforced concrete structure on new alignment over Tide Creek. This project provides for two lanes of traffic and completes the improvement of this highway between Goble and St. Helens.

In St. Helens, 0.62 mile of highway was improved from Columbia Boulevard to the south city limits to provide a wider travelway with parking area to relieve the traffic congestion within this portion of the city.

From Sand Station to the Washington State Line in Umatilla County, 6.97 miles of shoulder oiling work was performed to stabilize the shoulder areas and reduce maintenance costs.

The Dalles-California Highway, U. S. 197 and 97: Five projects were completed on this highway during the biennium.

A major relocation of the highway from Willowdale to Lyle Gap involved 5.25 miles of grading and oiling and the construction of a reinforced concrete bridge at the new crossing of Hay Creek. The new construction follows close to the old highway from Willowdale to Trout Creek Road then lies generally to the northeast of the existing route until it ties into the existing highway at Lyle Gap. The new highway is two-lane construction with additional lanes provided on ascending grades for slow moving traffic. This completes the improvement from Sherman Junction to Lyle Gap.

4.73 miles of shoulder oiling work was completed on the South Unit, Madras-Culver Junction Section to help reduce maintenance costs by preventing infiltration of water at pavement edges.

In the vicinity of Lobert, the highway was widened to provide refuge lanes for the traffic turning into the Johns-Manville Corporation enterprise. This improvement was initiated as a safety measure due to the large number of vehicles leaving and entering the highway at this point.

Reoiling work was performed on 11.57 miles from the Midland Highway Junction to the California State Line.

John Day Highway, Oregon 19 and U. S. 26: The U. S. Bureau of Public Roads has supervised and completed a Federal Forest Road Project from a point near the Grant-Baker County Lines to the easterly boundary of the Whitman National Forest. The work involved the grading, surfacing and oiling of 4.52 miles of highway on improved alignment and grade.

Two highway construction projects completed involved the construction of a reinforced concrete bridge over Beech Creek in the town of Mt. Vernon replacing the old obsolete structure, and 4.64 miles of grading and oiling on improved alignment and grade over Butte Creek Pass about six miles southerly of Fossil.

Old Oregon Trail Highway, U. S. 30: On the noninterstate portion of this highway, two projects were completed.

One project in connection with an interstate project called for regrading and paving 0.68 mile of the existing highway and construction of a new bridge over Benson Creek to prevent inundation of the highway by the filling of the Brownlee Dam reservoir about 3.3 miles south of Huntington.

The other project called for grading and paving of 0.1 mile of approach on the Oregon side of the new Snake River Bridge at Nyssa.

Perry-Oro Dell Unit of U.S. 30 under construction to 4-lane Interstate standard in Union County.

Central Oregon Highway, U. S. 20: Three construction projects on this highway were completed.

On the East Unit, Fort Rock Road-Brothers Section, 11.97 miles of grade widening and paving work was completed to provide a 22-foot black top pavement with four foot oiled shoulders. Oiling work was performed on 18.02 miles on the Suntex Section west of Burns to stabilize and smooth up the wearing surface. Between Horseshoe Bend and the Gwynn Railroad Undercrossing, about four miles east of Juntura, 2.48 miles of grading and asphaltic concrete paving was performed to provide a wider and safer roadbed, with a minor change in alignment at the easterly end of the project.

Oregon-Washington Highway, Oregon 11: Improvement was made on 11.99 miles of the highway between Pendleton and Adams, involving 1.56 miles of grade widening on ascending grade to provide an additional lane for slow moving traffic and 11.99 miles of reoiling to smooth and level up the existing bituminous surfacing.

Oregon Coast Highway, U. S. 101: Eleven construction projects have been completed on this highway during the biennium, including two Forest Road projects.

At the junction of the Oregon Coast and Sunset Highways about three miles south of Seaside, the highway was widened and a separated connection provided to the Sunset Highway for facility of traffic movements at the junction; also illumination of the junction with mercury vapor luminairs was provided as a safety measure for night traffic.

Under supervision of the U. S. Bureau of Public Roads and within the limits of the Siuslaw National Forest, 2.13 miles of grading work and 0.02 mile of bridge construction over Neskowin Creek was completed on the first unit of the highway relocation from Neskowin south. The new location lies to the west of the present highway and will ultimately tie into the existing highway south of the crossing of the Salmon River at Otis.

A major improvement in the highway involved the reconstruction of 6.30 miles of the highway from Siletz Bay to Depoe Bay. The work in general, involved widening the existing highway, reducing grades and improving sight dis-

tances. The work included a relocation of the route from Sijota Creek to Gleneden on improved line and grade, whereas at Depoe Bay a curbed street section was constructed to provide four-lane traffic with parking area to relieve traffic congestion through this popular beach resort. Two new concrete bridges were constructed over Sijota Creek and Fogarty Creek. This project completes the improvement of the route to modern standards, from Siletz Bay to Newport, a distance of 20 miles.

At Thiel Creek about 3.2 miles south of Newport, the old wooden bridge was removed and replaced with a 132-inch structural plate pipe culvert, with a new fill and oiled surface provided on improved grade.

Between Waldport and Yachats, 8.49 miles of this highway was resurfaced with 1½ inches of asphaltic concrete, to strengthen and level the existing oiled surfacing which had required expensive maintenance.

Asphaltic concrete resurfacing was performed on 1.99 miles of intermittent sections of the highway between Bunker Hill and Davis Slough, south of Coos Bay, repairing winter damage.

A 7.14 mile section of grading work was completed between Davis Slough and Beaver Lookout on the relocated highway which lies considerably to the west of the present highway and extends from Davis Slough to Bandon. This unit has been graded to provide a two-lane roadbed with additional lanes provided for slow moving traffic on ascending grades and for refuge lanes for turning movements. In this 7.14 mile section, the maximum grade is six per cent with only seven curves, none of which has a curvature exceeding six degrees per 100 feet of length.

In the vicinity of Conner Creek, about nine miles south of Bandon, 0.28 mile of grading and oiling work was performed on new alignment and grade eliminating a hazardous curve and dip in the existing highway.

The U. S. Bureau of Public Roads has supervised and completed the paving of 8.45 miles of reconstructed highway between Greggs Creek and Wedderburn with traffic interchanges provided at Nesika Beach and at Wedderburn Junction all within the limits of the Siskiyou National Forest.

Between Gold Beach and Hunter Creek, 1.18 miles of existing highway was widened to provide a 64-foot paved street section between curbs through the main section of Gold Beach with a two-lane section extending to the south city limits. This work replaced the old narrow oiled surfacing and included the grading and paving of a parking area at the entrance to the Union High School to provide off street parking for students and teachers.

In Brookings, 0.39 mile of highway from Oak Street to the Chetco River was widened to improve alignment and also to provide an additional "creeper" lane on ascending grades for slow moving traffic.

Wallowa Lake Highway, Oregon 82: Two projects on this highway were completed during the biennium. One project involved 0.25 mile of widening work on Main Street (Wallowa Lake Highway) from West Third Street to East First Street in the City of Enterprise, to provide for two lanes of traffic and parking through the business section of the city.

Between Minam and Rock Creek, 7.60 miles of highway was reconstructed on improved line and grade to provide a 20-foot asphaltic concrete travelway flanked by four-foot paved shoulders with a turnout parking area provided for use by tourists and fishermen.

Baker-Homestead Highway, Oregon 86: About 5½ miles of this highway was reconstructed during the biennium. The work involved the grading and oiling of the East Unit, Black Bridge-Richland Section and the reconstruction of the existing bridge over Eagle Creek. The work is mostly on new alignment which eliminates several sharp curves on the old highway. This completes the improvement from Black Bridge to Richland with a savings in distance of approximately 0.54 mile.

Also, from Richland northeasterly via the community of Pine and continuing down Pine Creek to Copperfield, 27.7 miles of new highway was constructed and financed by the Idaho Power Company to replace that section of the old Baker-Homestead Highway extending easterly from Richland via Robinette and Brownlee to Copperfield. This highway relocation was made necessary by dams being constructed on the

Snake River. The oiling of this new section was completed in the early Fall of 1958.

McKenzie Highway, U. S. 126: In the City of Springfield, 0.78 mile of street widening work was performed between 10th Street and 19th Street to provide two 14-foot traffic lanes with eight-foot parking between concrete curbs to alleviate traffic congestion in this heavily travelled section of highway. A second bridge was constructed over the Willamette River at Springfield just upstream from the existing structure to carry eastbound traffic, and 0.39 mile of grading and paving work was performed on approaches and connections to the structure to complete the one-way couplet at Springfield.

Grading and paving work was performed on 0.77 mile of the East Unit, Finn Rock-Elk Creek Section of the highway about two miles west of Blue River. The work performed to improve both line and grade, eliminating two bad curves and improving sight distance and a new reinforced concrete bridge was constructed on new alignment over Elk Creek.

On the Deep Canyon Section between Sisters and Redmond, 3.65 miles of grading and oiling work was performed on improved line and grade to provide a 22-foot oiled travelway flanked by eight-foot shoulders with an additional 11-foot lane provided on ascending grades for slow moving traffic. The existing Deep Canyon Bridge was removed and replaced by a pipe culvert and fill.

Willamette Highway, Oregon 58: Between Dexter and Lowell, 2.1 miles of existing bituminous surfacing was resurfaced with asphaltic concrete to strengthen and level the travelway which is subject to heavy traffic loads. Also, a reinforced concrete overflow bridge was constructed near the Coast Fork of the Willamette River, about 2.71 miles east of the junction of the Willamette and Pacific Highways to provide a relief opening through the fill and prevent washouts during high water periods.

Fremont Highway, Oregon 31 and U. S. 395: Two sections of this highway were improved during the biennium. In the vicinity of Silver Lake about 11 miles easterly of the town of Silver Lake, the existing highway grade was raised about 3½

Modernized East Unit, Crescent Lake Jct.-The Dalles-California Highway section of the Willamette Highway in Klamath County.

feet to elevate the highway above flood stage, involving 1.34 miles of grading and oiling. In the City of Lakeview 0.48 mile of street widening and curb construction was performed from 3rd Street South to the city limits of Lakeview.

Klamath Falls-Lakeview Highway, Oregon 66: In Klamath Falls the existing narrow overcrossing structure over the Southern Pacific Railroad Company's tracks on South Sixth Street was replaced with a new four-lane structure. In connection with the new structure, 0.87 mile of approaches and service roads were graded and paved, a portion of South Sixth Street was widened, a street lighting system was provided, and traffic signals were installed at four intersections permitting South Sixth Street to serve northbound traffic on a one-way couplet. About two miles west of Lakeview, Thomas Creek was diverted by means of a channel change and carried

under a new reinforced concrete bridge to prevent washing out of the highway embankments at this location.

Redwood Highway, U. S. 199: Grading and paving work was performed on two sections of this highway in the vicinity of the East and West Forks of the Illinois River near Cave Junction. This work involved 2.26 miles of relocated line eliminating several curves and on improved grade to provide, in general, two lanes of pavement with acceleration and deceleration lanes added at the Rockydale Road Intersection.

Mt. Hood Highway, U. S. 26 and Oregon 35: Four projects were completed on this highway during the biennium. In Portland the roadway portion of the Ross Island Bridge was widened by removal and reconstruction of the south sidewalk to provide additional travel width for vehicular traffic. About nine miles east of Sandy, a new reinforced concrete bridge was constructed on new alignment over Alder Creek and 0.09 mile of grading and paving work was performed on the west approach and temporary connection to the existing highway at the east end of the new structure.

The U. S. Bureau of Public Roads has supervised and completed a Forest Road Project under four separate contracts involving the relocation and improvement of 5.85 miles of highway from a point 4.2 miles east of the post office at Rhododendron to a point just easterly of the junction of the highway with the road to Timberline Lodge. The work involved an overcrossing structure to provide for the separation of local traffic to and from the Government Camp recreational area and grading and paving on improved line and grade to provide a 39-foot black top pavement flanked with stone shoulders varying in width from four to eight feet. Completion of this relocated section of highway provides a saving in travel distance of 1.1 miles on a smooth roadway replacing the old circuitous route.

Alsea Highway, Oregon 34: On the Eckman Slough Section about two miles east of Waldport, the existing narrow timber bridge over Eckman Slough was removed and replaced with a widened fill and concrete overflow structure. The work

involved 0.16 mile of grading and oiling to provide a 22-foot travelway flanked by five foot stone shoulders.

Pendleton-John Day Highway, U. S. 395: Between Pendleton and Pilot Rock, a distance of 13.64 miles was graded and paved on new alignment and grade under three separate contracts. The new highway for the first 5.18 miles lies generally to the east of the existing highway; the next 4.84 miles runs approximately parallel to and about 100 feet west of the existing highway, and the remaining 3.62 miles runs approximately parallel to and on the easterly side of the existing highway. In general, the work called for two-lane construction with additional lanes provided for four-lane traffic at Pendleton and Pilot Rock and an additional "creeper" lane provided on ascending grades for slow moving traffic. A new concrete bridge was constructed over McKay Creek and the existing

Section of the modernized Pendleton-Pilot Rock Unit, U.S. 395 in Umatilla County.

bridge over Tutuilla Creek was widened to provide for four-lane traffic.

Within the limits of the Malheur National Forest, the U. S. Bureau of Public Roads has supervised and completed 2.32 miles of highway reconstruction from Mt. Rest to the south forest boundary. The work involved grading and oiling and the construction of a new bridge over Beech Creek.

Tualatin Valley Highway, Oregon 8 and 47: Between Forest Grove and Hillsboro, 5.15 miles of highway was reconstructed to provide a four-lane divided highway along present alignment utilizing the existing roadway with improved status for westbound traffic and a new roadway offset to the south for eastbound traffic. One way couplets were provided through Forest Grove, Cornelius, and Hillsboro. The Dairy Creek bridge, about one mile west of Hillsboro, was widened to provide two additional travel lanes. From Reedville to Beaverton, a distance of 4.69 miles, the highway was widened to provide for four lanes of traffic with a paved parking area and concrete curbs on either side of the four lanes of main travelway through urban sections.

Willamina-Salem Highway, Oregon 22: Between Dolph Corner and Rickreall, 4.43 miles of paving work was completed providing a two lane pavement with additional width pavement provided at county road crossings as speed-change lanes permitting traffic to enter and leave the main highway without interfering with the main flow of traffic. A savings of 2.67 miles in distance over the old route resulted from this improvement.

Wilson River Highway, Oregon 6: Six contract projects were completed during the biennium on this highway. Between Tillamook and Donaldson Creek 4.38 miles of highway relocation was graded and paved. In Tillamook from the Oregon Coast Highway Junction to Miller Avenue, grading and paving was performed to provide a two-lane roadway for westbound traffic, eastbound traffic being carried on the existing highway; from Miller Avenue to Olsen Road, a four lane highway was constructed and two-lane construction from there to the easterly termini of the project. Just east

of the east city limits of Tillamook a new undercrossing structure was completed to carry the highway under the Southern Pacific Railroad tracks.

New structures were completed at the third, fourth, fifth and sixth crossings of Wilson River and over the South Fork of Gales Creek about 16 miles west of Forest Grove. From Glenwood to North Plains, 9.76 miles of paving work was completed on the previously graded section providing two lanes of pavement with an additional lane added on ascending grades for slow moving traffic.

Salmon River Highway, Oregon 18: Between Wallace Bridge and Sheridan, a distance of 7.03 miles, 6.86 miles of grading work, 6.25 miles of paving and new structures over Mill Creek and at the Sheridan Interchange all on relocated line, were completed during the biennium to provide a two-lane travelway with complete separation of traffic provided at Sheridan and East Sheridan. The new location lies south of the South Yamhill River and approximately one mile south of the old route. Paving work is being performed on the unit from Valley Junction to Wallace Bridge which will complete the improvement from Valley Junction to Sheridan.

Beaverton-Hillsdale Highway, Oregon 10: From the Washington County Line easterly 2.24 miles to an intersection with the Capitol Highway at Hillsdale, this route was improved by widening the existing highway to provide four lanes of asphaltic concrete pavement, with channelization of traffic at important crossroads and with new curbs and parking areas provided at the more congested business areas along the route. This improvement was designed to eliminate the hazards of congested traffic, narrow roadway and numerous turnout movements, prevalent on the old highway.

Ochoco Highway, U. S. 26: Between the Ochoco State Park and Crooked River just west of Prineville, 0.61 mile of the highway was widened to provide an additional traffic lane on the ascending grade for slow moving traffic; also, guard rail was installed along the descending grade as a protective measure for vehicular traffic.

Section of the modernized Moro-Grass Valley Unit, U.S. 97 in Sherman County.

Sherman Highway, U. S. 97: Shoulder oiling work was performed on 6.61 miles of highway roadbed between Moro and Grass Valley to help cut maintenance costs by preventing infiltration of water into the subgrade.

From the intersection of the Sherman Highway with Bryan Street in the City of Grass Valley to a point 6.75 miles north of the Town of Kent, 5.88 miles of highway was constructed on improved grade and alignment to provide a 22-foot black top pavement with eight-foot shoulders, four feet of which, adjacent to the pavement, was oiled to prevent infiltration of water into the subgrade.

Monmouth-Independence Highway: To relieve traffic congestion in the City of Monmouth, 0.24 mile of grade widening and paving work was performed between East Street and the East City Limits (Fourth Street) to provide 44 feet of

black top paving between new curbs which permits parallel parking on both sides of the street with two traffic lanes left open for main highway travel.

Umpqua Highway, Oregon 38: The U. S. Bureau of Public Roads has supervised and completed 5.49 miles of grading work on improved alignment and grade from Echo Resort to Loon Lake Road all in the Siuslaw National Forest to provide a minimum 36-foot roadbed.

Sunset Highway, U. S. 26: Four construction projects were completed on this highway during the biennium.

Cannon Beach Junction, at the junction of the Sunset and Oregon Coast Highways about three miles south of Seaside, was reconstructed by widening the highway to provide refuge lanes for turning movements from the Sunset to the Oregon Coast Highway. The project also included the illumination of the intersection with mercury vapor luminaires.

On the east side of the summit between Quartz Creek and Rock Creek about seven miles east of Elsie, 1.18 miles of grade widening work was performed to provide an additional lane for slow moving vehicular traffic on the long ascending grade. Between Humbug Summit and Elsie the westerly 1.59 miles from Humbug Summit easterly was widened and paved to provide an additional "creeper" lane on ascending grade for slow moving traffic and the easterly five miles of existing highway was resurfaced to provide a stable all weather roadway.

Completion of the Highlands Undercrossing structure and paved approaches eliminate cross traffic to and from the new Portland zoo by carrying said traffic over the Sunset Highway (Canyon Road).

John Day-Burns Highway, U. S. 395: A section of this highway in the City of John Day between S. W. 2nd Avenue and the South City Limits was improved by widening the old 20-foot travelway to 44 feet with curb sections on the west side and improved drainage throughout. This construction was undertaken to relieve the congested traffic situation through John Day by providing a wide travelway with side parking.

On the Poison Creek-Burns Section north of Burns, 8.62 miles of highway was graded and oiled on improved alignment and grade within the limits of the Malheur National Forest as a Forest Road Project under the supervision of the U. S. Bureau of Public Roads.

Lakeview-Burns Highway, U. S. 395: A 13.9 mile section of this highway between Alkali Lake and Lake Abert was reoiled to provide a more stable and smooth riding surface with a resulting saving in future maintenance costs.

Warm Springs Highway, U. S. 26: A section of this highway 8.95 miles in length between Clear Creek and Willow Creek was reoiled to provide a more stable and smoother riding surface.

Secondary State Highways

During the 1957-1958 period there have been 45 highway construction projects including 16 bridge projects completed on 35 of the 134 highways on the secondary state highway system.

A brief description of these projects by geographical divisions of the State, is as follows:

Division No. 1: Comprising the easterly portion of Columbia County, the northerly portion of Yamhill County, the westerly and southerly portions of Hood River County, the westerly portion of Wasco County, and the Counties of Multnomah, Clackamas and Washington. Five construction projects were completed, involving 1.11 miles of grading, stone base, and asphaltic concrete paving, 37.56 miles of oiling and one bridge.

On the Nehalem Highway between Sunset Avenue and the south city limits in the City of Banks, 0.26 mile of highway was widened an additional ten feet on both sides to provide a 40-foot wide city street section between curbs.

A 343-foot reinforced concrete bridge was constructed over the Molalla River on the Woodburn-Estacada Highway, approximately 2½ miles northeast of Molalla. In conjunction with the bridge, there was 0.41 mile of new roadway constructed to provide approaches to the new bridge. The approaches to the new structure were finished with asphaltic

concrete pavement, 22 feet wide and flanked with eight-foot wide stone shoulders. The new bridge was constructed approximately 100 feet upstream from the old bridge and after it was completed the old 210-foot steel truss bridge was dismantled and turned over to Clackamas County for use on their county road system.

In the city of Beaverton, the Farmington Highway was widened between the west city limits and Main Street. The highway was widened to provide a 44-foot paved street between curbs.

Oiling projects were completed on six miles of the Timberline Lodge-Government Camp Highway in Clackamas County. The new oiled surfaces provide a smooth riding surface for the traveling public.

Another oiling project was completed in Division No. 1 to provide better driving surfaces for the motoring public. The sections and highways on which the oiling work was done are as follows: 8.08 miles of the Hillsboro-Silverton Highway from two to ten miles north of Newberg; 4.15 miles of the Farmington Highway extending west from Beaverton; 5.72 miles of the Beaverton-Tualatin Highway between its junction with the Scholls and Pacific West Highways and between the City of Tualatin and the R. H. Baldock Freeway, and 13.58 miles of the Cascade Highway between Oregon City and Molalla.

Division No. 2: Comprising the westerly portion of Columbia County; the southerly portion of Yamhill County and the Counties of Clatsop, Tillamook, Lincoln, Benton, Polk, Marion and Linn. Fifteen construction projects were completed during 1957 and 1958, involving 7.31 miles of grading, 14.95 miles of stone base, 4.14 miles of oiling, 10.84 miles of asphaltic concrete paving, and ten bridges.

One section of the Fishhawk Falls Highway just north of its junction with the Sunset Highway was reconstructed to correct a slide condition which had developed. This work was done on 0.2 mile of highway and was finished with a smooth riding oil mat wearing surface.

Also on the Fishhawk Falls Highway, 0.40 mile of new

roadway and a 374-foot bridge over the Nehalem River were constructed to replace the old timber truss spans. The design of the new structure included the use of two of the three bridge piers of the old structure. While the new structure was being constructed, a temporary detour bridge was provided to carry traffic over the river.

The East Unit of the McMinnville Airport-Dayton Junction Section of the Three Mile Lane Highway near Dayton in Yamhill County was graded and oiled to provide a route around the City of Dayton for through traffic and eliminate the necessity of fast moving traffic going through the heart of Dayton. Bridges were constructed over the Yamhill River, at the Dayton Interchange, and at Lafayette Road. The west unit of the section has also been contracted and is to be completed during the next biennium, thus completing the improvements.

Basque Maintenance Station on U.S. 95 north of McDermitt, Malheur County.

On the Bellevue-Hopewell Highway, 0.28 mile near Hopewell was graded and oiled on new alignment to eliminate a sharp curve and to provide flared connections to a county road and the approach road to Hopewell School. The improvement provided a 22-foot oiled surface with four-foot stone shoulders.

On the North Santiam Highway, 9.28 miles of stone base and paving was completed between the Sublimity Gun Club, which is about two miles east of Aumsville, and Stout Creek, which is about 1.5 miles west of Mehama. The completed highway was paved generally to a width of 24 feet with extra width where necessary to provide for turning movements at interchanges. This section was graded during the previous biennium. A contract for grading has been awarded and should be completed along with the paving during the next two-year period for the section of the North Santiam Highway between Salem and the Sublimity Gun Club.

Also, 0.62 mile of the North Santiam Highway (Airport Road) between State Street and the Mission Street Extension at Salem, was improved by resurfacing with asphaltic concrete pavement. An extension of Mission Street to provide access to the North Santiam Highway was graded and paved on new alignment under the same contract.

On the Siletz Highway near the City of Siletz, 0.82 mile of highway was graded and oiled on the south side of the Siletz River to make a connection to the new bridge over the river at the south city limits of Siletz.

On the Halsey-Sweet Home Highway, about 1.2 miles west of Crawfordsville, 0.19 mile of highway roadbed and a new prestressed concrete box girder bridge over Calapooya River were constructed to replace the old wood truss McKercher Bridge.

On the Netarts Highway 0.22 mile between McKinleys Moorage and Radio Station K T I L transmitter, about one mile west of Tillamook, was graded and oiled. The work was done in coordination with a future dike construction project and raised the grade of the roadbed to the level of the future dike.

On the Hillsboro-Silverton Highway, 1.04 miles of the south portion of the Newberg-Gearin Corner Section was

graded on new alignment and a new bridge over the Willamette River was constructed at a new location about 1½ miles downstream from the old bridge. Also, three overflow structures were built in the flood plain adjacent to the river to provide waterway clearances for the passage of flood waters. The project, when completed in the next biennium, will provide a two-lane pavement with additional width for acceleration and deceleration lanes where necessary and will eliminate the crooked roadway and the narrow obsolete bridge over the Willamette River which has been in use for many years.

The Silver Creek Falls Highway (State Street) between 12th Street and the East City Limits in the City of Salem was widened to provide for four lanes of traffic. Between 12th and 17th Streets, the highway was widened to a total width of 64 feet which was ample to provide parallel parking on both sides of the street. Parking was eliminated between 17th Street and the east city limits (near 25th Street). This project was financed jointly by the federal government, the State and the City of Salem.

On the Jefferson Highway one mile east of the City of Jefferson, the super-structure was replaced on the bridge over one of the Santiam River Overflow channels. The reconstruction of the bridge was performed one half width at a time to permit alternating one-way traffic throughout the construction time.

Division No. 3: Comprising the Counties of Lane, Douglas, Coos, Curry, Josephine, and Jackson. In this division there were ten construction projects completed during the two-year period, involving 11.74 miles of grading, 19.37 miles of stone base and surfacing, 12.02 miles of oiling, 7.35 miles of asphaltic concrete pavement, and one bridge.

Two projects were completed on the Richardson-Eugene Highway. One of the projects involved 2.77 miles of grading and 8.82 miles of stone base and oiling between Walton and Noti, which was done generally along the old alignment with minor changes which eliminate some sharp curves. The finished oiled surface is 22 feet wide and is flanked by four-foot stone shoulders. The other project on the Richardson-

Eugene Highway involved 3.29 miles of grading work on the Richardson-Siuslaw River Section between a point 0.1 mile west of the Richardson Station of the Southern Pacific Railroad Company's Coos Bay Branch line and a point 0.1 mile east of Austa Station, on the same Coos Bay Branch line. In general, the new highway follows along the southerly side of the Siuslaw River with the portion of the embankments on the side next to the river being protected by a blanket of rock. The highway was graded extra width through critical cuts for fallout area to protect the highway from falling rock. The surfacing and paving work on this section is to be completed during the next two-year period.

On the Springfield-Creswell Highway, 2.01 miles of highway roadbed between Cloverdale and the bridge over the Coast Fork Willamette River east of Creswell was graded on new and improved grade and alignment. The new roadbed was oiled 22 feet wide and flanked by four-foot stone shoulders. Also, under the same contract, a reinforced concrete bridge was constructed over Bear Creek.

On the South Unit, Kellogg Bridge-Yellow Creek Section of the Elkton-Sutherlin Highway about 12 miles northwest of Sutherlin, 1.90 miles of highway was graded and paved on new and improved alignment and grade. The 20-foot asphaltic concrete pavement is flanked by four-foot stone shoulders.

In the City of North Bend the Cape Arago Highway was widened and paved, new curbs were constructed and a new storm sewer system was installed between Monroe Avenue on Virginia Avenue and 16th Street on Broadway. The 1.09 miles of widened highway provides for four lanes of traffic with parallel parking on both sides of the street.

On the Catching Slough-Chandler Bridge Section of the Coos River Highway, 1.3 miles of roadbed was reconstructed and paved to a minimum width of 22 feet with asphaltic concrete. This section of highway is located about 2.5 miles east of the junction of the Coos River and Oregon Coast Highways at Coos Bay.

On the Oakland-Shady Highway (Old Pacific Highway) just north of Oakland, 0.19 mile of roadway was improved by raising the grade to eliminate a sharp dip in the old pavement.

Relocated U.S. 99 south of Roberts Mountain, Douglas County.

The new roadway was paved with asphaltic concrete 22 feet wide which was flanked by four-foot stone shoulders on both sides.

On the China Gulch-Copper Road Section of the Medford-Provolt Highway, 0.89 mile of highway was reconstructed by raising the grade and reinforcing the fill sections with rock materials to assist in the prevention of erosion and flooding by the Applegate River. This project was located about 14 miles southwest of Medford and provided the users with a 20-foot oiled surface flanked by four-foot stone shoulders.

The River Banks Farm Section of the Rogue River Loop Highway about eight miles southwest of Grants Pass was reconstructed on new and improved grade and alignment. The new section was finished with a 20-foot wide asphaltic concrete pavement flanked by four-foot wide stone shoulders.

In the City of Medford, Eighth Street West was improved

between Elm and Front Streets by widening the roadbed, installing a new storm sewer system, constructing curbs, and paving with asphaltic concrete 44 feet wide. Eighth Street West will be used for eastbound traffic in conjunction with Seventh Street West (westbound traffic) to provide one-way traffic on the Medford-Provolt Highway between Elm Street and Riverside Avenue (Pacific Highway northbound).

Division No. 4: Lying easterly of the summit of the Cascade Mountains and comprising the central portion of Oregon between the Columbia River and California. Seven construction projects were completed during the biennium, involving 21.61 miles of grading, 24.31 miles of stone base and surfacing, 32.0 miles of oil mat surfacing and three bridges.

A new 343-foot reinforced concrete bridge with 26-foot roadway width was constructed over the John Day River, near the town of Service Creek, on the Service Creek-Mitchell Highway. The structure was built on new alignment which necessitated the construction of 0.32 mile of new roadway.

On the Paulina Highway 8.02 miles on the East Unit, Camp Creek-Paulina Section about 46 miles southeast of Prineville, was graded on improved alignment and grade to provide a 36-foot roadbed, supporting a 20-foot oil mat wearing surface and four-foot stone shoulders. This improvement provides a stable, all weather roadway capable of carrying the traffic to which it is being subjected. In conjunction with this grading and oiling project, a 100-foot reinforced concrete bridge was constructed over the South Fork of the Crooked River and a 110-foot reinforced concrete bridge over Beaver Creek.

The Klamath Lake Highway was reoiled from Ft. Klamath to a point about 2.5 miles west of Ft. Klamath and the Chiloquin Highway was reoiled from Chiloquin to the junction of the Chiloquin and Modoc Point Highways. The reoiling work was done to provide a smooth riding surface.

On the Shaniko-Fossil Highway 8.05 miles between Shaniko and Antelope in Wasco County was widened and oiled to provide a smooth, stable, dust free travelway which replaced the old graveled road. The width of the new oiled highway is

generally 20 feet with the exception of the section through the town of Antelope which was oiled 40 feet wide.

Improvement of the Wasco-Heppner Highway between Hay Canyon, about nine miles southeast of Wasco, and the John Day River was accomplished by grading and oiling 5.22 miles of roadbed on new alignment and by oiling an additional 3.02 miles of roadbed along the old alignment in Cottonwood Canyon.

Grading work was performed on 4.43 miles of the Clear Lake-Belknap Springs Highway between the South Santiam Highway and Clear Lake as a Federal Forest Road Project under supervision of the U. S. Bureau of Public Roads.

Division No. 5: Comprising the most easterly portion of Oregon. In this division there were eight construction projects completed during 1957 and 1958, involving 46.42 miles of grading, 51.15 miles of stone base and surfacing, 23.65 miles of oiled surfacing, 17.57 miles of asphaltic concrete pavement and one bridge.

Paving work was completed on the previously graded 1.22 mile section of the Hermiston Highway between Hinkle and Bucks Corner about three miles south of Hermiston in Umatilla County. Also, on the Hinkle-Bucks Corner Section, a new 310-foot reinforced concrete bridge was constructed over the Umatilla River to replace the old timber truss bridge which was badly deteriorated.

Paving was completed on 16.29 miles on the Idaho-Oregon-Nevada Highway from Burns Junction southerly to the Basque Maintenance Station. The new section was paved 20 feet wide and replaced the old oiled surface.

On the Wasco-Heppner Highway, 20.06 miles of roadway was improved between the John Day River and Hay Creek about five miles northwesterly from the City of Condon. The channel of Cottonwood Creek was changed in several places which enabled the raising and widening of the old roadway. The new roadbed was reinforced with an adequate stone base and was surfaced with 20-foot wide oil mat wearing surface.

Three contracts (including one which became in default after partial completion) were awarded and the work com-

pleted in the grading of 10 miles and oiling of 3.59 miles of the Ukiah-Hilgard Highway between its junction with the Pendleton-John Day Highway and the Umatilla National Forest Boundary. The portion of the project on which the 20-foot oil mat wearing surface was placed began at the junction of the Pendleton-John Day and the Ukiah-Hilgard Highways and extended easterly to a point just beyond the town of Ukiah. Grading work was performed on 5.96 miles of the Ukiah-Hilgard Highway between Frazier Guard Station and Union County Line as a Federal Forest Road Project under supervision of the U. S. Bureau of Public Roads.

Grading, stone base, and paving work was performed on the Heppner-Spray Highway from the Rock Creek Bridge about six miles southeast of Hardman and extending south for 4.27 miles as a Federal Forest Road Project under supervision of the U. S. Bureau of Public Roads.

County Roads

During 1957 and 1958, 81 highway and bridge construction projects were completed under the supervision of the State Highway Commission on county roads lying outside of the primary and secondary state highway systems. These projects were located on the Federal system of secondary highways and were constructed under cooperative agreements with the U. S. Bureau of Public Roads and the respective counties. The projects were located in 33 of the State's 36 counties, and involved 103.92 miles of grading, 122.34 miles of stone base surfacing, 143.09 miles of oil mat surfacing, 46.61 miles of asphaltic concrete surfacing and the construction of 49 bridges.

Also, three Federal Forest Road Projects were completed on county roads under the supervision of the U. S. Bureau of Public Roads. These projects involved 5.90 miles of grading, 4.47 miles of stone base surfacing and 4.47 miles of oil mat surfacing.

Benton County: Two projects, one year apart, were completed on 4.64 miles of the Alsea Highway-Greenberry Road between the Alsea Highway and Beaver Creek School. The first project involved the grading and construction of stone

Applegate River Bridge south of Grants Pass U.S. 199 in Josephine County.

surfacing and the second project was for the oiling of the previous project. This road is located about five miles southwesterly of Philomath.

Clackamas County: Four projects were completed in Clackamas County involving 0.87 mile of asphalt paving and stone base and the construction of five bridges. In Oswego 0.59 mile of road was paved and curbs constructed on a continuous section of the Country Club Road and "A" Avenue. This work provides a four-lane roadway with curb parking, replacing a narrow two-lane road with gravel shoulders. Another project involved the paving of 0.28 mile of the Clackamas-Boring Road 44 feet in width between curbs. Bridges were constructed on Aemisegger Hill Road over Deep Creek, Redland-Logan Road over Clear Creek, Barlow-Monitor Road

over Bear Creek and Rock Creek, and on Whiskey Hill Road over Rock Creek.

Clatsop County: Three bridges were built on county roads during the biennium. On the Lewis and Clark River Road two bridges were constructed over the Lewis and Clark River, one near the Natell Grange and one about seven miles south of Miles Crossing. On the Hillcrest Loop Road a bridge was built over Big Creek south of Knappa Grade School.

Columbia County: On the Pittsburg-Scappoose Road three bridges were constructed. Two over the North Fork Scappoose Creek, one about 1.3 miles north of Scappoose, and the other 6.5 miles north of Scappoose. The third bridge was over the South Fork Scappoose Creek in the City of Scappoose.

Coos County: At the request of the county, the State paved 0.13 mile of new alignment on the Glasgow Road at its junction with the Oregon Coast Highway in North Bend. On the North Bank Road near Beaver Slough 0.23 mile of stone base was placed on the approach to the 725-foot concrete and timber overcrossing constructed over the Southern Pacific Railroad. This work eliminated the railroad grade crossing for traffic traveling to the chrome plant.

Crook County: On the Logdell Road between Paulina and Suplee two projects were completed which involved the grading of 9.84 miles of the road to improve width, grade and alignment, and the construction of two bridges.

Curry County: Between Dans Point and the Plywood Plant, 3.5 miles of the Gold Beach-Bagnall Ferry Road previously graded and surfaced by the County was paved with asphaltic concrete.

Deschutes County: Nineteen county roads had an oil mat wearing surface constructed upon them for a total of 42.55 miles of oiled roads.

Douglas County: A new bridge was constructed over the South Umpqua River on the Riddle Road, and 1.02 miles of the Forest Boundary-Tiller Road was graded and oiled to

provide a 22-foot travelway. Also in Douglas County, three Forest Road Projects were completed under the supervision of the U. S. Bureau of Public Roads. On the North Umpqua Road, of the 10.37 miles between Steamboat Creek and Wilson Creek, the first 4.47 miles was oiled and the remaining 5.90 miles was graded and a bridge constructed over Dry Creek.

Gilliam County: New bridges were constructed over Rock Creek on the Blalock-Mikkalo Road about 16 miles south of Arlington and over Thirtymile Creek on the Thirtymile Creek Road about six miles south of Condon. On Seales Road 14.40 miles of oil mat wearing surface was built between the Radar Station and the Condon Junction.

Harney County: A new bridge was completed over the middle fork of the Malheur River on the Van-Drewsey Road at the Town of Drewsey. Also, the Oregon State Highway Department in behalf of the United States Government constructed 5.92 miles of roadway and placed 6.87 miles of stone surfacing on the Burns Mountain Road to provide an all-weather roadway to the Air Force Station northwest of Burns.

Hood River County: On Brookside Drive between Indian Creek and Windmaster Corner 0.85 mile of roadway was graded and oiled to a width of 20 feet. Two contracts were completed on seven county roads as follows: 0.57 mile of oil mat surfacing on the Glass Road northeast of Odell, 1.05 miles of oil mat surfacing on the Neal Creek Road east of Odell, 0.89 mile of oiling on the Central Vale Road south of Odell, 2.00 miles of oiling on the Parkdale Road northwest of Parkdale, 1.3 miles of oiling on the Chamberlain Road near Hood River and Odell, 0.50 mile of oiling on the Andrews Road near Hood River and Odell, and 0.70 mile of oiling on the Paasch Road near Hood River and Odell.

Jackson County: On Table Rock Road two projects were completed between Bybee Bridge and Central Point Junction for a total of 3.47 miles, involving the placing of a 22-foot asphalt pavement on the present roadway. On the Crater Lake Highway-Jacksonville Road, a total of 3.84 miles was paved. A section 1.49 miles long from Table Rock Road to

the Crater Lake Highway, and another section 2.35 miles long from Ross Lane to Jacksonville.

Josephine County: On the Wilderville-Grants Pass Road a bridge was built over Slate Creek at Wilderville. On the Galice Road 3.60 miles was graded through Windy Gap.

Klamath County: Two bridges were constructed on county roads, one on the Charles Drew Road over the Lost River at Wilson Dam and the other over the K.I.D. "A" Canal on the Homedale Road.

Lake County: On the Warner Valley Road, a bridge was constructed over Deep Creek at Adel. On the Fort Rock Road 6.38 miles was graded and oiled between Horse Ranch and Fort Rock.

Lane County: On the Mapleton-Richardson Road a total of five bridges and 3.07 miles of grading was completed. All five

Knowles Creek Tunnel on the Richardson-Eugene Highway in Lane County.

bridges cross Knowles Creek from 1.5 miles to five miles east of Mapleton. 0.27 mile of the grading involved the construction of a tunnel at the summit. On the Eugene-Marcola Road, a new bridge was built over the Mohawk River about five miles northeast of Springfield.

Lincoln County: On the Elk City Road two bridges were constructed, one over the Yaquina River at Toledo and the other over Big Elk Creek nine miles east of Toledo. On the North Bank Road three bridges were built over overflow arms of Yaquina Bay southwest of Toledo. Between Catherine Street and the Yaquina River on the Butler Bridge Road at Toledo, 0.62 mile of stone surfaced roadway was completed.

Linn County: Between West Scio and Scio on the Greens Bridge-Scio Road 1.54 miles of roadway was paved with asphaltic concrete. Between the Albany Canal and the Lebanon Junction 3.63 miles of the Albany-Brownsville Road was paved. Between Crabtree Junction and Brewster 3.8 miles of the Crabtree Corner-Lebanon Road was paved and between Oak Creek School and Lebanon 6.87 miles of the Orleans-Lebanon Road was paved.

Malheur County: On Lytle Boulevard between Vale and Grand Avenue a total of 11.45 miles of roadway was graded and oiled south from Vale.

Marion County: A total of seven projects were completed on Marion County Roads involving four bridges, 10.64 miles of paving, and 0.25 miles of oiling as follows: bridge over Champoeg Creek on the Yergens Corner-Newberg Road, bridge over Clear Lake on the Clear Lake Road, bridges over the Pudding River and Beaver Creek on the Kaufman School Road, 2.92 miles of grading and paving on the Wheatland Road between Hopmere Road and McNary Wye, 4.63 miles of grading and paving on the State Street Extension between Four Corners and Geer Station, 3.09 miles of grading and paving between Browning Avenue and Rosedale on Liberty Road, and 0.25 miles of grading and oiling on Rose Avenue (not on the federal aid county road system) between "D" Street and Center Street.

Morrow County: The westerly 12.16 miles of Willow Creek Road between Heppner and the Umatilla Forest Boundary were graded and oiled.

Multnomah County: Two projects were completed on 122nd Ave. (county road) during this two-year period, for a total distance of 2.68 miles. The work consisted of grading, placing a stone base and asphaltic concrete pavement between curbs to provide a four-lane roadway.

Glisan Street (county road) was widened to 66 feet which provided a four-lane travelway with parking on each side. The work consisted of 0.95 mile of stone base and asphaltic concrete pavement.

Polk County: Three projects were completed during the biennium, as follows: One project involved the construction of a 220-foot timber and reinforced concrete bridge and approaches over the Luckiamute River on the Granger Road between Independence and Albany, replacing the old narrow steel bridge. Another project involved 3.96 miles of grading, drainage and stone surfacing work on the Burns Corner-Suver Road extending easterly from a point about 0.25 mile west of the store at Airlie. A 170-foot concrete deck girder bridge was constructed over the Little Luckiamute River in the Town of Falls City. This structure has a roadway width of 26 feet.

Sherman County: On the Monkland Road 3.2 miles was graded by the State and 1.8 miles graded by county forces with a crushed stone base and oil mat wearing surface constructed over both graded sections. A new 70-foot reinforced concrete bridge was constructed over Grass Valley Creek at the same time.

Tillamook County: 1.68 miles of the Cape Meares Loop County Road between Oceanside and a point about 0.74 mile north of the Short Creek Crossing was graded to provide a two-lane roadbed. Drainage facilities were constructed to carry the existing creeks along and under the new roadway. This project provided a roadbed with easy grades and eliminated the sharp curvature which existed in the old road. The surfacing work is to be done by Tillamook County.

Umatilla County: A section of the Adams-Cayuse County Road beginning at a point about 12 miles east of Pendleton and extending easterly a distance of 5.26 miles to a point 0.15 mile east of the Thornhollow School was improved by grading a roadway on new alignment with a 20-foot oiled surface flanked by four-foot stone shoulders to provide a smooth safe traveling highway. In conjunction with this project two small wooden bridges were replaced with reinforced concrete rigid frame bridges.

Also the South Mission Road was improved from its junction with the Old Oregon Trail 1.5 miles south of Mission and extending southerly for a distance of 3.5 miles. This section of roadway was regraded to eliminate irregularities in grade and alignment and was surfaced with a 20-foot wide oil mat flanked by four-foot stone shoulders.

Union County: A total of 14.48 miles of stone base and 18.80 miles of oiling work was completed on five county roads in Union County. The roads on which the work was performed are as follows: Fruitdale Road between Mt. Glenn Road and Hunter Lane Road, Cove Avenue betwen the east city limits of La Grande and Island City-Lone Tree Road, Mt. Glenn Road between the Iowa School and a point 0.25 mile north of the north city limits of La Grande, North Powder River Road between North Powder and the bridge over the North Powder River at Davis Ranch, and Hunter Lane Road between Iowa School and Island City. All of these couny roads were oiled to a width of 20 feet except for Hunter Lane Road which was oiled 18 feet wide. These improvements provide the people in the vicinity of Island City and La Grande with smooth all-weather travelways.

Wallowa County: Two bridges were constructed near Enterprise, replacing existing narrow steel truss spans. One bridge was a 70-foot reinforced concrete span over the Wallowa River about 0.10 mile west of Enterprise, and the other a 60-foot reinforced concrete span over Hurricane Creek approximately 0.70 mile west of Enterprise.

Also, two projects were completed on the Flora Spur Road from Flora to the Enterprise-Lewiston Highway. The grading

project eliminated several sharp curves and improved the grade. The second project improved the road with a 20-foot oil mat wearing surface and stone shoulders.

Wasco County: Three projects were completed at various places in the county. One project consisted of the improvement of 4.17 miles of the Boyd-Dufur County Road with a 20-foot oiled surface flanked by two-foot stone shoulders.

The second project consisted of the installation of a 72-inch culvert in Rock Creek and the construction of a 156-foot reinforced concrete deck girder bridge over Gate Creek on the Pinehurst School-Tygh Valley County Road. Also, 0.48 mile of approach road was graded to provide safe access to the bridge.

The third project completed the grading of 8.43 miles of the Tygh Ridge County Road on improved alignment eliminating numerous hazardous curves. The section of road improved is about 11 miles southeast of Dufur.

Washington County: Approximately 4.69 miles of the Shadybrook-Hillsboro County Road was improved by widening of intermittent sections, placing a stone base over part of the section and finishing the entire North Plains-Hillsboro Section with asphaltic concrete.

Three reinforced concrete and treated timber structures were constructed, two over Beaverton Creek and one over Rock Creek on the Baseline Road east of Hillsboro. These bridges replaced three badly deteriorated timber bridges.

Wheeler County: Two projects were completed on the Spray-Waterman County Road. One project consisted of grading 3.12 miles of roadway on vastly improved alignment and grade. This section starts approximately 5.15 miles southerly from the bridge over the John Day River near Spray.

Under the second project a stone surface was placed on 8.34 miles starting at the bridge near Spray and extending southerly to a section that had previously been surfaced. This now provides a 22-foot stone surface roadway from Spray to Waterman.

Yamhill County: A 378-foot reinforced concrete and steel bridge was constructed over the Yamhill River, in Lafayette,

on the Lafayette-South County Road; also, grading was completed on 0.17 of a mile of roadway approaches to the bridge. The new structure replaced a narrow steel truss bridge at the same location.

Also, a 20-foot oil mat flanked by four-foot stone shoulders was placed on 2.07 miles of the Lafayette Road from Lafayette to the Three Mile Lane Road.

City Allotment Fund Projects

Each year the Highway Department is obligated to contract and supervise construction for the betterment of streets in selected cities having populations not exceeding 5,000. This construction is financed by an annual withholding of $250,000 from the regular state tax city street fund and is planned to improve city streets not on any state highway system but which are subjected to unusually heavy usage.

During 1957 and 1958, construction under these special city allotment funds was completed on 42 city streets in 33 cities and involved 8.13 miles of bituminous paving, 1.44 miles of oil surfacing, 9.07 miles of grading, construction of one bridge and related work such as drainage improvement and curb construction.

This work was performed in the following cities: Adams, Athena, Beaverton, Carlton, Chiloquin, Condon, Coquille, Cornelius, Cove, Dayton, Eastside, Echo, Elgin, Gladstone, Haines, Hermiston, Heppner, Madras, Metolius, Milton-Freewater, Monmouth, North Powder, Oakridge, Ontario, Philomath, Powers, Prairie City, Prineville, Sheridan, Stanfield, Tualatin, Union and Willamina.

Expenditures for city allotment fund projects during the biennium amounted to $543,035.

CLASSES OF HIGHWAYS

The classes of highways with which the Highway Commission is normally concerned, and in connection with which it normally expends the state and federal funds which are entrusted to it, are as follows:

1. Primary State Highways
2. Secondary State Highways
3. Federal-aid Interstate Highways
4. Federal-aid Primary Highways
5. Federal-aid Secondary Highways
6. Public Lands Highways
7. Federal Forest Highways
8. County Roads

Classification of highways as above indicated is made necessary by the several plans of highway financing that have been developed during the years by the State and Federal Governments. Each plan of financing limits itself to particular highways or kinds of highways and thus establishes a new classification. It is possible for a highway to be in two or more classes. For instance, a primary state highway may also be a primary federal-aid highway. Likewise, a road may be both a county road and a secondary federal-aid highway.

Brief descriptions of these several different classes of highways are given in the paragraphs which follow:

Primary and Secondary State Highways: State highways are those highways for which the State has assumed the responsibilities of maintenance and improvement. In the beginning, all state highways were of the same class, but when the point was reached where the system included a complete network of the main arterial highways, it became desirable to have a separate system for highways which serve as feeders to the main network rather than as main lines. The main arterial system was, therefore, designated the Primary State Highway System, and a second system, called the Secondary State Highway System, was set up to receive such additional highways as might not be considered of sufficient importance to justify inclusion in the Primary System.

Additions to the Primary System may be made by the State Legislature or by the State Highway Commission. Additions to the Secondary System may be made by joint action of the State Highway Commission and the county court of the county in which the highway is situated. The conditions under which state moneys may be expended on primary and secondary highways are the same for both classes. Counties bear no

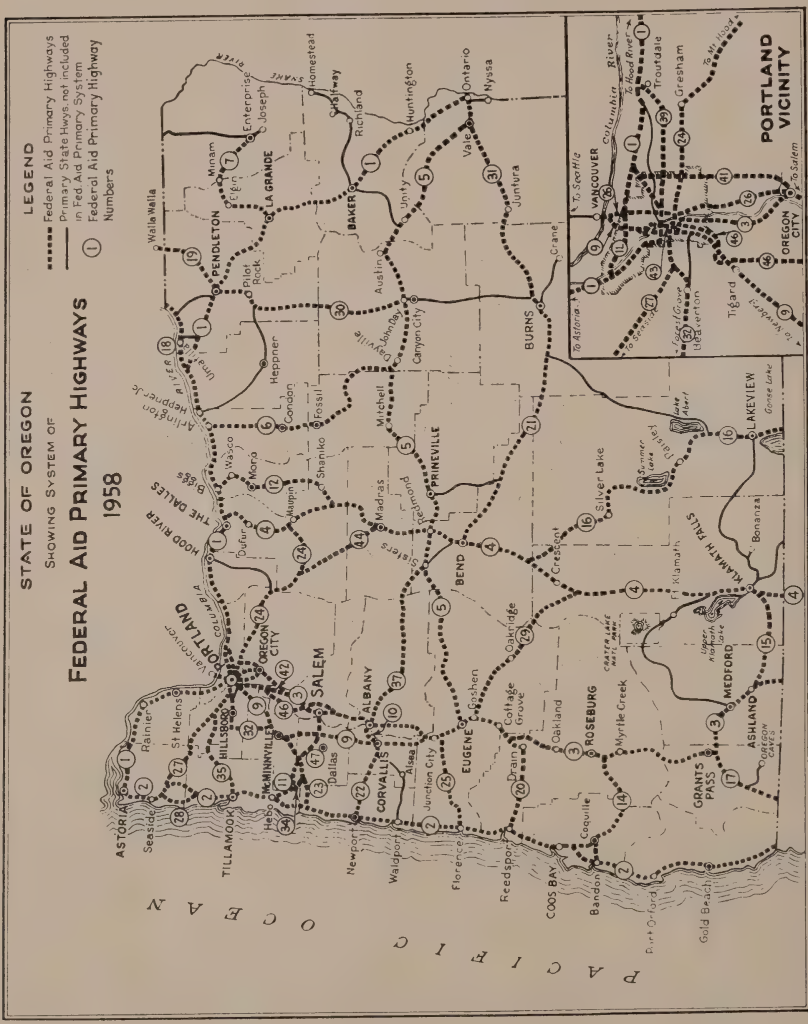


TABLE III

Federal Aid Primary Highway System

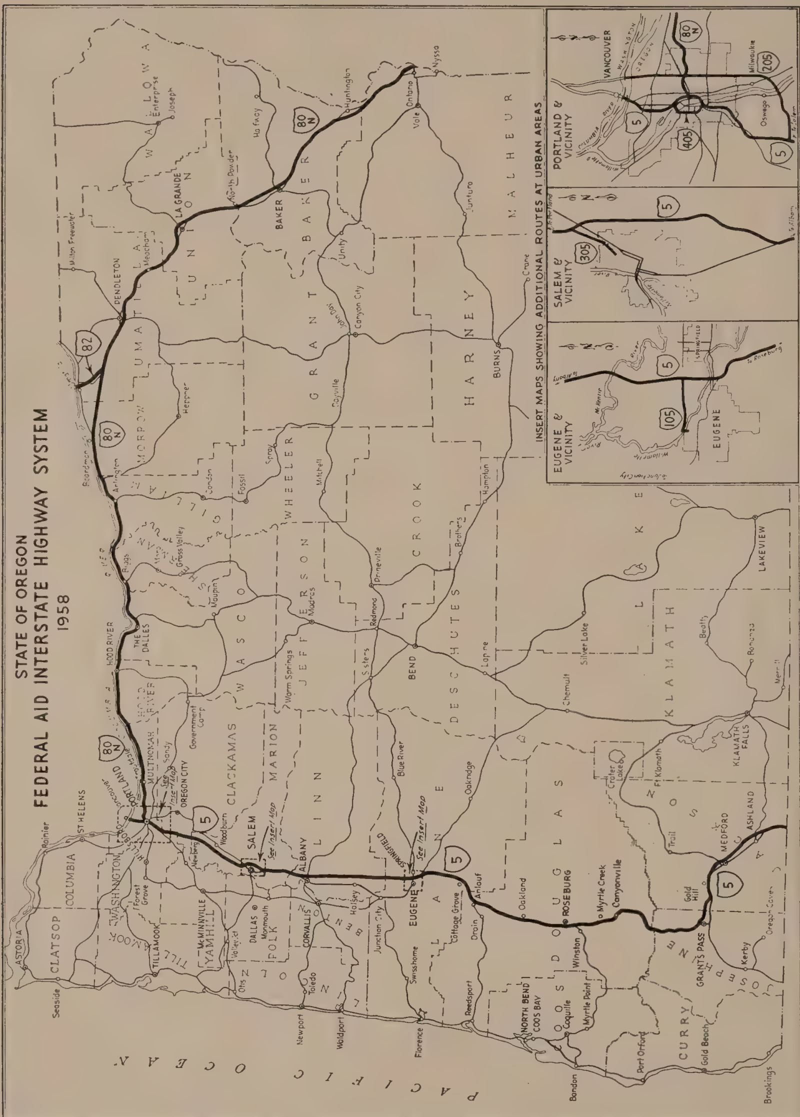
Federal Route No.	Highway	Total Route Mileage	Mileage Within Urban Areas	Mileage Within National Forests	Mileage Within Indian Reservations, Etc.	Net Chargeable Mileage	Mileage Coincident With Interstate System
1.	Astoria to Ontario	*487.25	50.10	32.32	20.18	384.65	341.40
2.	Oregon Coast	365.21	8.36	43.22	**0.30	313.33	.....
3.	Pacific	316.59	31.11	6.96	.....	278.52	168.94
4.	The Dalles-California	***292.13	8.06	42.51	49.98	191.58	.....
5.	Eugene to Ontario	380.01	3.61	91.09	.....	285.31	.....
6.	Arlington to Dayville	123.09	.....	.....	.....	123.09	.....
7.	La Grande to Enterprise	65.09	0.42	.....	.....	64.67	.....
9.	Pacific West	115.02	20.84	.....	.....	94.18	0.65
10.	Albany-Corvallis	10.56	1.34	.....	.....	9.22	.....
11.	Hebo-McMinnville	46.40	0.17	13.48	.....	32.75	.....
12.	Sherman	68.61	.....	.....	.....	68.61	.....
14.	Coos Bay-Roseburg	77.15	.....	.....	.....	77.15	.....
15.	Green Springs	59.21	0.68	1.60	.....	56.93	.....
16.	Fremont	158.19	.....	20.50	.....	137.69	.....
17.	Redwood	41.59	.....	0.96	.....	40.63	.....
18.	Boardman to Wallula	37.49	.....	.....	.....	37.49	.....
19.	Pendleton to Washington State Line	35.32	0.06	.....	1.14	34.12	.....
20.	Umpqua	57.21	.....	0.57	.....	56.64	.....
21.	Bend to Burns	131.50	1.19	.....	.....	130.31	.....
22.	Corvallis-Newport	56.05	1.00	.....	.....	55.05	.....
23.	Salmon River	21.81	.....	.....	.....	21.81	.....
24.	Portland to Maupin	95.75	5.19	35.82	.....	54.74	.....
25.	Siuslaw	66.08	.....	17.55	.....	48.53	.....
26.	East Portland-Oregon City	19.52	14.11	.....	.....	5.41	0.95
27.	Sunset	65.81	6.38	.....	.....	59.43	.....
28.	Cannon Beach Road	20.35	.....	.....	.....	20.35	.....
29.	Willamette	86.38	.....	64.42	.....	21.96	.....
30.	Pendleton-John Day	121.90	2.25	16.54	.....	103.11	.....
31.	Burns to Vale	114.89	.....	.....	.....	114.89	.....
32.	Tualatin Valley	42.43	6.30	.....	.....	36.13	.....
34.	Boyer-Dolph	5.60	.....	4.90	.....	0.70	.....
35.	Tillamook to Banks	51.20	.....	.....	.....	51.20	.....
37.	Santiam	100.36	1.58	56.97	.....	41.81	.....
39.	Baseline Road	13.08	4.58	.....	.....	8.50	.....
41.	82nd Avenue	14.09	7.74	.....	.....	6.35	.....
42.	Wilsonville-Hubbard	5.59	.....	.....	.....	5.59	.....
44.	Warm Springs	46.50	.....	6.82	27.25	12.43	.....
46.	Portland-Salem Freeway	51.34	6.94	.....	****23.50	20.90	50.62
47.	Willamina-Salem	26.09	1.85	.....	.....	24.24	.....
	Totals	3,892.44	183.86	456.23	122.35	3,130.00	562.64

* Includes loop in North Portland and connection to Hood River. Does not include Banfield Freeway.

** Cape Perpetua Lighthouse Reserve.

*** Includes loop in Klamath Falls.

**** Willamette River to Hayesville, 23.50 miles, not chargeable due to prior inclusion in interstate system.



financial responsibility for the maintenance or improvement of either class.

The present mileage of Primary State Highways is 4,820. The present mileage of Secondary State Highways is 2,658.

Federal Aid Interstate Highway System

Route No.	Route Description	Total Route Mileage	Mileage Within Urban Areas	Mileage Within National Forests	Mileage Within Indian Reservations, Etc.
1	Portland-California State Line	310.35	21.95	6.96	.....
2	Portland-Ontario	375.91	22.25	32.19	20.18
3	Stadium Freeway	3.10	3.10	.....	.....
4	Laurelhurst Freeway	21.50	11.43	.....	.....
5	Salem Spur	3.06	1.01	.....	.....
6	Eugene Spur	2.81	0.19	.....	.....
7	Stanfield-Umatilla	14.00	.....	.....	.....
	Totals	730.73	59.93	39.15	20.18

Complete listings of the highways included in the primary and secondary state systems are given in Tables 29 and 32 in Section Three of this report. A small-scale map showing the highways which comprise the two systems is also included in Section Three.

Listings of expenditures made on the primary and secondary state highways appear in Tables 11 to 16, inclusive, in Section Three.

Federal-aid Interstate Highways: Federal-aid Interstate Highways are those federal-aid primary highways which have been selected to form a National System of Interstate Highways not exceeding 41,000 miles in total extent, connecting the principal metropolitan areas, cities and industrial centers in the Nation.

Interstate Highways in Oregon are (1) the Pacific Highway from the California state line south of Ashland to the Washington state line south of Vancouver, Washington, (2) the Columbia River Highway and Old Oregon Trail Highway from Portland east to the Idaho state line near Ontario, (3) a new highway extending from the Columbia River bridge at Umatilla, south and east to a junction with the Old Oregon Trail near Stanfield, (4) two urban loops serving the City of Portland, and (5) two connecting spurs serving the cities of Salem and Eugene. The approximate mileage of Interstate Highways in Oregon is 731.

Federal-aid interstate funds may be expended only on federal-aid interstate highways. The amounts of this class of

funds alloted to the State of Oregon beginning with the first authorization for the fiscal year 1954 are as follows:

Fiscal year 1954	$ 427,813
Fiscal year 1955	428,962
Fiscal year 1956	2,330,696
Fiscal year 1957	15,911,917
Fiscal year 1958	23,078,783
Fiscal year 1959	29,509,661
Fiscal year 1960	43,108,375

Federal-aid Primary Highways: Federal-aid primary highways are those highways which have been designated by mutual agreement between the Highway Commission and the Federal Bureau of Public Roads as highways eligible to have primary federal-aid funds expended upon them. It is intended that these highways be the main highways of the State and that, in combination, they comprise a complete network serving all county seats and the larger centers of population.

Federal-aid primary funds allotted to the State of Oregon for use on federal-aid primary highways for the fiscal years 1954 to 1960 were as follows:

Fiscal year 1954	$4,198,212
Fiscal year 1955	4,209,393
Fiscal year 1956	5,398,620
Fiscal year 1957	6,357,968
Fiscal year 1958	6,441,151
Fiscal year 1959	6,518,788
Fiscal year 1960	6,789,530

Federal-aid urban funds may be expended upon those portions of federal-aid primary highways which are within officially designated urban areas.

A complete listing of the federal-aid primary highways in Oregon is given in Table III in Section Two of this report.

The mileage of highways of this class is limited to eight per cent of the total mileage of public roads in existence in 1921, which places the limit for the State of Oregon at 3,346.1 miles, exclusive of miles within national forests and other federal reservations and exclusive of miles within urban areas. In the system as now approved, the mileage, exclusive of miles in national forests and other reservations and in urban areas is 3,130. The mileage in national forests and other reservations is 579.

Middle Unit, Spray-Waterman Section—BEFORE—FAS county road cooperative project in Wheeler County.

Middle Unit, Spray-Waterman Section—AFTER—completing FAS county road cooperative project in Wheeler County.

Federal-aid Secondary Highways: Federal-aid Secondary Highways are those highways which comprise the Federal-aid Secondary Highway System and are, therefore, eligible to have federal-aid secondary highway funds used in their improvement. Designations of highways of this class are made by the state highway departments acting in cooperation with the county commissioners or other appropriate local road officials and the Commissioner of Public Roads. They are intended to be principal secondary and feeder roads, including farm-to-market roads, rural free delivery mail routes, and public-school bus routes, either outside of municipalities or inside of municipalities of less than five thousand population.

There is no limitation on the mileage of highways that may be designated Federal-aid Secondary Highways except that the total mileage should be no greater than can be improved within a reasonable period of time. The mileage is expected to include county roads as well as state roads, but no ratio as between mileage of county roads and mileage of state roads is specified. However, it is the present practice of the Bureau of Public Roads to require that no less than 50 per cent of a state's allocation of federal-aid secondary funds be used on the county roads included in the secondary system.

In Oregon, the Federal-aid Secondary Highway System comprises 3,455 miles of state roads and 3,910 miles of county roads. A statement of the FAS mileage on both the local road system and the state system is given in accompanying Table IV.

Federal-aid secondary funds allotted to the State of Oregon for use on federal-aid secondary highways for the fiscal years 1954 to 1960 were as follows:

Fiscal year 1954	$2,933,480
Fiscal year 1955	2,941,860
Fiscal year 1956	3,772,987
Fiscal year 1957	4,444,383
Fiscal year 1958	4,507,969
Fiscal year 1959	4,565,092
Fiscal year 1960	4,751,847

Federal-aid urban funds may be expended upon those portions of federal-aid secondary highways which are within officially designated urban areas.

TABLE IV

Federal-Aid Secondary Highway System

The mileages given in this table are inclusive of mileages within cities, towns and urban areas.

County	Miles Added During 1958		Length in Miles to Date		
	State System	Local Road System	State System	Local Road System	Total System
Baker	1.3	.....	183.1	40.0	223.1
Benton	10.4	35.4	60.2	78.6	138.8
Clackamas	5.6	32.7	94.5	141.2	235.7
Clatsop	.....	28.5	49.7	56.3	106.0
Columbia	.....	50.4	41.9	118.1	160.0
Coos	.....	53.6	77.8	101.6	179.4
Crook	.....	9.4	108.8	71.1	179.9
Curry	5.5	53.1	6.3	73.3	79.6
Deschutes	10.8	126.0	72.0	258.6	330.6
Douglas	30.0	134.7	137.4	214.6	352.0
Gilliam	.....	53.9	49.9	125.3	175.2
Grant	.....	23.4	82.8	95.6	178.4
Harney	.....	119.4	208.8	178.4	387.2
Hood River	.....	13.4	65.0	52.0	117.0
Jackson	7.6	19.9	145.8	94.9	240.7
Jefferson	.....	15.5	27.9	56.9	84.8
Josephine	.....	24.6	64.9	71.3	136.2
Klamath	15.8	134.5	245.5	222.5	468.0
Lake	.....	47.0	136.0	99.6	235.6
Lane	8.3	39.6	149.6	149.7	299.3
Lincoln	11.7	29.5	71.7	88.3	160.0
Linn	15.0	152.6	103.4	270.9	374.3
Malheur	1.3	34.0	229.8	109.3	339.1
Marion	.....	35.6	153.5	183.2	336.7
Morrow	10.0	.....	138.2	59.6	197.8
Multnomah	22.6	15.0	27.8	70.7	98.5
Polk	.....	59.7	51.8	92.3	144.1
Sherman	.....	29.5	40.0	73.0	113.0
Tillamook	.....	.....	18.6	38.1	56.7
Umatilla	2.7	25.5	163.4	157.1	320.5
Union	.....	4.3	115.9	57.5	173.4
Wallowa	1.0	.....	86.1	32.2	118.3
Wasco	.....	91.8	46.8	182.3	229.1
Washington	.....	20.3	70.9	85.2	156.1
Wheeler	16.2	25.9	61.2	42.0	103.2
Yamhill	.....	12.6	68.2	68.6	136.8
Totals	175.8	1,551.3	3,455.2	3,909.9	7,365.1

Public Lands Highways: Public Lands Highways are highways or parts of highways which, because of their being on unappropriated and unreserved public lands, Indian reservations or other federal reservations, are eligible to have Public Lands Highway funds expended upon them. No definite system has been designated for this class of highways, but to date use of the Public Lands Highway funds has been confined in principal part to the Warm Springs Highway across the Warm Springs Indian Reservation, the I. O. N. Highway in Malheur County, the Crane-Scotts Butte Highway in Harney and Malheur Counties, and the Burns-Lakeview Highway in Harney and Lake Counties.

Federal funds authorized for Public Lands Highways are allotted to projects in the several public lands states "on the basis of need as determined by the Commissioner of Public Roads". Of the funds authorized for the fiscal year 1952 and subsequently, the following amounts have been allotted to Oregon:

Fiscal year 1952—For I. O. N. Highway	$200,000
Fiscal year 1955—For I. O. N. Highway	209,844
Fiscal year 1956—For I. O. N. Highway	225,000
Fiscal year 1957—For I. O. N. Highway	190,000

Federal Forest Highways: The Federal Forest Highway System comprises such main highways within or near national forests as have been designated by the Federal Forest Service, the Bureau of Public Roads and the State Highway Commission for improvement with federal forest highway funds. A list of the highways included in this system is given in Table V.

Construction work financed with Forest Highway funds is contracted and supervised by the Bureau of Public Roads. However, the Highway Commission has a voice in the selection of the projects to be undertaken, and in matters of location and standards of construction.

Federal funds authorized for use on Forest Highways during each of the fiscal years 1960 and 1961 are in the amount of $33,000,000. Oregon's share of each is approximately $4,500,000.

County Roads: County roads are those roads, control of which, and responsibility for which, rests with the counties by

and through the respective county courts or county commissions. They comprise those roads in the state which are not a part of either the state highway system or the systems of roads over which control is held by the federal government by reason of their being located in national forests, national parks and Indian reservations.

County roads constitute about 54 per cent of all roads in the state. The total mileage is 28,789. Of them 3,910 miles are in the federal-aid secondary highway system.

Funds with which county roads are improved and maintained come from the following sources:

1. Property taxes.
2. Road-user fees and taxes, including motor vehicle license fees, gasoline tax, motor transportation fees and fines for traffic law violations.
3. Federal aid.

Of the road-user fees and taxes collected within the state, 19 per cent is allotted to counties for use on their county roads. In 1958, this 19 per cent will amount to approximately $11,000,000.

County roads which are on the federal-aid secondary highway system (3,910 miles) are eligible to have federal-aid secondary highway funds expended upon them. Allotments of this class of funds to county roads of Oregon amount to $2,340,000 for the fiscal year 1960 and approximately $2,400,000 for the fiscal year 1961. These federal funds must be matched with local (state or county) funds on a 40 per cent local, 60 per cent federal, basis and it has been agreed that in Oregon the match money will be contributed half by the State and half by the counties. Thus, under the federal-aid program, county roads will receive for the fiscal year 1960 the benefit of an expenditure of $3,900,000, this amount comprising $2,340,000 of federal funds, $780,000 of state funds and $780,000 of county funds.

Expenditures under the federal-aid program must be confined to highway construction and improvement; none of the moneys available for that program may be used in maintenance work. Work under that program is to be done by contract

and under engineering supervision of the State Highway Department.

According to reports rendered by counties, the total expenditure on county roads during the year 1955 (exclusive of federal and state expenditures) amounted to $26,884,818.

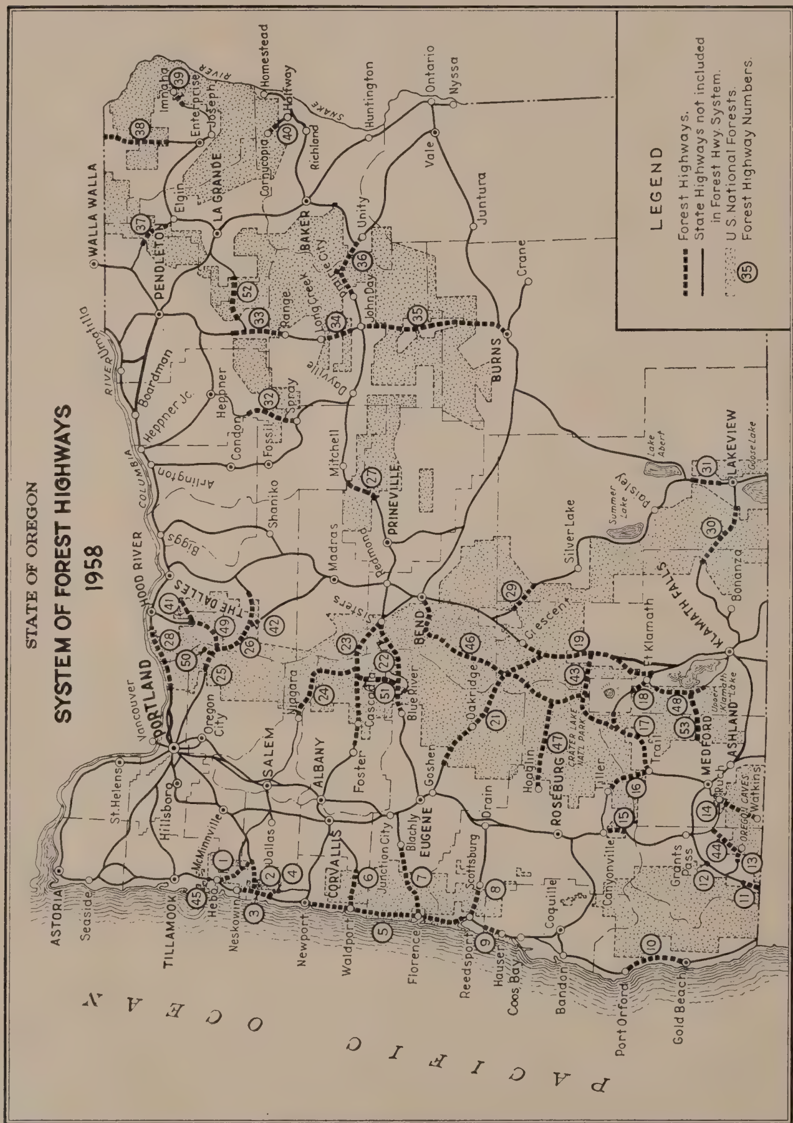


TABLE V

Oregon Forest Highway System

Forest Road No.	State No.	Name	Termini	Length in Miles
1	32	Three Rivers	Hebo-Boyer	16.4
2	39	Salmon River	Oregon Coast Highway-Polk County Line	13.7
3	9	Oregon Coast	Neskowin-Siletz River	22.8
4	181	Siletz	Oregon Coast Highway-Forest Boundary	6.0
5	9	Oregon Coast	Yaquina Bay-Umpqua River	68.7
6	27	Alsea	Waldport-Benton County Line	28.1
7	34	Siuslaw	Oregon Coast Highway-Blachly	45.1
8	45	Umpqua	Reedsport-Scottsburg	15.6
9	9	Oregon Coast	Douglas County Line-Hauser	8.8
10	9	Oregon Coast	Port Orford-Gold Beach	27.2
11	25	Redwood	O'Brien Schoolhouse-State Line	5.4
12	25	Redwood	Summit Hayes Hill-Love Station	1.8
13	38	Oregon Caves	3 miles west of Forest Boundary to Caves	11.5
14	....	Applegate (county road)	Ruch-Watkins	17.0
15	1	Pacific	Canyonville-2¾ miles south of Forest Boundary	11.0
16	230	Tiller-Trail	Tiller to Trail	26.3
17	22	Crater Lake	Trail-Park Boundary	44.0
18	22	Crater Lake	Park Bdry. to Sun Mountain Highway	7.7
19	*	Dalles-California	Crescent to Crater Lake Highway	57.8
21	18	Willamette	Lowell to Dallas-California Highway	73.3
22	15	McKenzie	Blue River to Sisters	51.2
23	16	Santiam	1 mile east of Foster to Sisters	69.5
24	162	North Santiam	Niagara-Santiam Highway	44.6
25	26	Mount Hood	West Forest Boundary to Warm Springs Jct.	15.4
26	(44 (53	Wapinitia Warm Springs	Mt. Hood Highway to 1 mile north of Wapinitia	32.6
27	41	Ochoco	West Forest Boundary to North Forest Boundary	19.6
28	2	Columbia River	West Forest Boundary to East Forest Boundary	27.3
29	19	Fremont	West Forest Boundary to East Forest Boundary	20.4
30	20	Klamath Falls-Lakeview	West Forest Boundary to East Forest Boundary	29.0
31	19	Fremont	4 miles south of Valley Falls to 6 miles north of Lakeview	13.0

TABLE V—Continued

Forest Road No.	State No.	Name	Termini	Length in Miles
32	321	Heppner-Spray	Mouth of Chapin Creek to John Day Highway	26.3
33	28	Pendleton-John Day	2½ miles northwest of Albee to Range	30.7
34	28	Pendleton-John Day	Long Creek-South Forest Boundary	20.5
35	**	John Day-Burns	John Day-Burns	69.8
36	5	John Day	Prairie City-Unity with a spur to Austin	40.0
37	330	Weston-Elgin	McDougall's Camp to Summerville-Elgin Road	23.2
38	11	Enterprise-Lewiston	State Line to South Forest Boundary	29.5
39	350	Little Sheep Creek	West Forest Boundary to Imnaha	8.8
40	413	Halfway-Cornucopia	Carson to Cornucopia	5.0
41	....	Loop-Dalles (county road)	Mt. Hood Highway to East Forest Boundary	15.0
42	53	Warm Springs	Wapinitia Highway to Forest Boundary	6.9
43	†	Diamond Lake	Union Creek to Dalles-California Highway via Diamond Lake	38.9
44	‡	Williams Creek	Provolt to Oregon Caves Highway	20.0
45	9	Oregon Coast	North Forest Boundary to South Forest Boundary between Beaver and Hebo	1.1
46	§	Cascade Lakes	North Boundary of Crater Lake Park to Bend	101.0
47	....	North Umpqua	Rock Creek to Cascade Lakes Highway	60.0
48	***	Klamath Lake	Seven Mile Creek to Forest Boundary southeast of Odessa Creek	20.0
49	26	Mount Hood	Warm Springs Junction-North Forest Boundary	21.5
50	173	Timberline	Mt. Hood Highway Junction to Timberline Lodge	5.6
51	215	Clear Lake-Belknap Springs	McKenzie Highway Junction near Belknap Springs to Santiam Highway	21.0
52	341	Ukiah-Hilgard	West Forest Boundary to East Forest Boundary	20.4
53	270	Lake of the Woods	West Forest Boundary to Jct. F. H. 48 near Rocky Point	24.3
			Total mileage on Forest Highway System	1,440.3
			Mileage on State System	1,235.0

* Includes 30.8 miles on Highway 4 and 27.0 miles on Highway 428.
** Includes 67.2 miles on Highway 48 and 2.6 miles on Highway 7.
† State Secondary Highways 233 and 425.
‡ Includes 7.0 miles on State Secondary Highway 261.
§ Includes 16.9 miles on State Secondary Highways 232 and 372.
*** Includes 3.8 miles on State Secondary Highway 270.

FINANCES

Sources of State Highway Income

Moneys used by the State Highway Commission in the improvement, maintenance and operation of highways and parks come from two general sources: (1) State funds, consisting principally of the Commission's share of the motor vehicle revenues collected by the State, and (2) Federal funds coming to the State in the form of federal aid. Some additional moneys are received as cooperation from counties and other agencies, but the amounts of these are small. Occasionally, on authorization by the State Legislature, the state fund income is supplemented by the sale of bonds.

The state funds above referred to are derived almost entirely from road-user taxes and fees as follows:

1. Gasoline tax.
2. Diesel fuel tax.
3. Motor vehicle license fees and operators' fees.
4. Motor transportation fees.
5. Fines for traffic law violations.

Of the revenues yielded by these taxes and fees, 19.0 per cent is allotted to the counties for use on county roads, and 10.0 per cent is allotted to the cities for use on city streets. From these revenues, also, an additional amount approximating 3.0 per cent is appropriated by the state legislature for use by the State Police Department. The remaining 68.0 per cent is placed at the disposal of the State Highway Commission for use on highways and parks.

Table VI shows in dollars and cents how the road-user revenues of the past several years have been shared between the counties, the cities, the State Police and the State Highway Commission.

Table VII combines the State Highway Commission's income from road-user revenues with other state fund income and with federal aid and other cooperative income, to give the Commission's total income and to show the trends in that income during the period 1947 to 1960.

Relocated section of North Santiam Highway in Marion County.

TABLE VI

Distribution of Road-User Revenues as Between Counties, Cities, State Police and Highway Commission 1947 to 1960

Year	Total Revenue (After Deduction of Refunds and Collection Expense)	Amounts Paid During Calendar Year			
		To Counties	To Cities	To State Police	To Highway Commission
1947	$26,909,331.93	$ 5,318,951.55	$ 1,116,720.52	$ 766,460.09	$19,707,199.77
1948	28,649,923.93	5,078,975.14	2,663,328.79	1,035,763.45	19,871,856.55
1949	30,633,221.29	6,677,113.29*	4,108,624.45	1,034,746.51	18,812,737.04
1950	42,508,972.44	7,022,116.21*	3,616,934.59	1,018,332.50	30,851,589.14
1951	44,363,588.90	7,974,421.62*	4,357,242.74	1,083,749.75	30,948,174.79
1952	47,036,032.88	8,635,326.51*	4,564,568.52	1,149,167.00	32,686,970.85
1953	50,050,521.35	9,262,118.90	4,835,724.03	1,356,573.50	34,596,104.92
1954	50,799,520.93	9,648,873.24	5,003,170.23	1,563,980.00	34,583,497.46
1955	54,595,352.48	10,145,176.33	5,258,840.04	1,617,748.50	37,573,587.61
1956	57,088,259.68	10,797,304.40	5,575,222.85	1,671,517.00	39,044,215.43
1957	56,664,929.32	10,758,505.78	5,748,421.43	1,850,033.25	38,307,968.86
1958 (Est.)	58,545,000.00	11,086,000.00	5,675,000.00	2,029,000.00	39,755,000.00
1959 (Est.)	60,195,000.00	11,424,000.00	6,012,000.00	2,205,000.00	40,554,000.00
1960 (Est.)	61,745,000.00	11,718,000.00	6,167,000.00	2,375,000.00	41,485,000.00

* Includes $1,127,597.97 loaned to certain counties in 1949 and 1950 and the repayment of such loans in 1950, 1951 and 1952.

TABLE VII

Incomes to Highway Commission from All Sources (Excluding Proceeds of Bond Sales) 1947 to 1960

Year	Road Users Revenues	Other State Sources	Federal Cooperative Funds	Other Cooperative Funds	Total Income
1947	$19,707,199.77	$ 76,554.92	$ 6,771,812.00	$ 38,621.33	$26,594,188.02
1948	19,871,856.55	298,824.66	6,180,173.46	51,041.04	26,401,895.71
1949	18,812,737.04	419,032.12	6,555,119.04	341,113.28	26,128,001.48
1950	30,851,589.14	515,840.04	6,586,420.35	364,431.88	38,318,281.41
1951	30,948,174.79	271,714.66	7,327,746.25	809,904.35	39,357,540.05
1952	32,686,970.85	375,958.70	7,334,398.41	740,141.14	41,137,469.10
1953	34,596,104.92	529,985.98	8,859,076.91	718,947.04	44,704,114.85
1954	34,583,497.46	1,089,877.42	10,028,460.50	595,760.54	46,297,595.92
1955	37,573,587.61	713,294.46	10,708,344.92	1,816,860.64	50,812,087.63
1956	39,044,215.43	450,039.76	14,740,739.80	1,248,663.16	55,483,658.15
1957	38,307,968.86	588,991.59	25,772,629.00	1,607,683.29	66,277,272.74
1958 (Est.)	39,755,000.00	1,005,000.00	28,158,000.00	2,144,000.00	71,062,000.00
1959 (Est.)	40,554,000.00	535,000.00	65,115,000.00	1,195,000.00	107,399,000.00
1960 (Est.)	41,485,000.00	290,000.00	48,625,000.00	1,170,000.00	91,570,000.00

TABLE VIII

Income for Calendar Year 1957

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Administrative Expense (Dept. of Motor Vehicles and P.U.C.)	Net Amount for State Highways, State Police, Cities and Counties
State Funds			
Motor vehicle license fees	$13,117,333	$ 2,180,352	$10,936,981
Gasoline tax ($37,015,550 less $3,378,779 refunds)	33,636,771	100,155	33,536,616
Diesel fuel tax	69,973	12,051	57,922
Motor transportation fees	12,423,043	719,581	11,703,462
Fines for traffic law violations	429,948		429,948
Cash discounts	34,952		34,952
Contributions to cities withheld	250,000		250,000
Interest on loan of bond funds	304,039		304,039
Bond Sales	20,205,801		20,205,801
Subtotals	$80,471,860	$ 3,012,139	$77,459,721
Less $1,850,033 contribution to State Police, $10,758,506 to counties and $5,748,421 to cities			$18,356,960
Net receipts of state funds for highway purposes			$59,102,761
Cooperative Funds			
Federal cooperative funds			$25,772,629
County cooperative funds			1,134,296
Miscellaneous cooperative funds			433,429
City cooperation on city allotment projects			39,959
Subtotal, cooperative funds			$27,380,313
Total, all receipts			$86,483,074
Balance on hand beginning of year			$11,702,011

Incomes, 1957 and 1958

The total of funds available to the Highway Department for expenditure during the two years 1957 and 1958 is estimated at $169,247,000, which amount comprises the following:

Unexpended balance carried over from 1956	$ 11,702,000
Receipts of road-user revenues, 1957	38,308,000
Receipts of road-user revenues, 1958	39,755,000
Receipts of Federal-aid funds, 1957	25,773,000
Receipts of Federal-aid funds, 1958	28,158,000
Receipts from sale of bonds, 1957	20,206,000
Receipts of other cooperative funds, 1957	2,196,000
Receipts of other cooperative funds, 1958	3,149,000
	$169,247,000

TABLE IX

Estimated Income for Calendar Year 1958

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Administrative Expense (Dept. of Motor Vehicles and P.U.C.)	Net Amount For State Highways, State Police, Cities and Counties
State Funds			
Motor vehicle license fees	$14,060,000	$ 2,260,000	$11,800,000
Gasoline tax ($37,703,000 less $3,400,000 refunds)	34,303,000	103,000	34,200,000
Diesel fuel tax	82,000	12,000	70,000
Motor transportation fees	12,750,000	750,000	12,000,000
Fines for traffic law violations	475,000		475,000
Cash discounts	50,000		50,000
Contributions to cities withheld	250,000		250,000
Refund of 1957 balance from State Police	37,000		37,000
Interest on loan of bond funds	668,000		668,000
Subtotals	$62,675,000	$ 3,125,000	$59,550,000
Less $2,029,000 to State Police, $11,086,000 to counties and $5,675,000 to cities			$18,790,000
Net receipts of state funds for highway purposes			$40,760,000
Cooperative Funds			
Federal cooperative funds			$28,158,000
County cooperative funds			994,000
Miscellaneous cooperative funds			1,120,000
City cooperation on city allotment projects			30,000
Subtotal, cooperative funds			$30,302,000
Total, All Receipts			$71,062,000
Balance on hand beginning of year			$28,806,081

Of the $169,247,000 available, $143,493,000 is expected to be disbursed during the two-year period, leaving $25,754,000 unexpended as of December 31, 1958. Of this balance, $7,500,000 is a necessary reserve held to meet bond payments, payments to counties and cities and certain other obligations of the early spring months which cannot be met from the low incomes of those months. The remaining $18,254,000 is a reserve needed to meet contractural obligations in connection with the State's bond program and federal-aid program.

Details of the incomes for each of the years 1957 and 1958 are shown in accompanying Tables VIII and IX.

TABLE X

Anticipated Incomes for Calendar Years 1959 and 1960

Source of Income	1959	1960
State Funds		
Motor vehicle license fees (net)	$ 12,100,000	$ 12,400,000
Gasoline tax (net)	35,200,000	36,200,000
Diesel fuel tax (net)	70,000	70,000
Motor transportation fees (net)	12,350,000	12,600,000
Fines for traffic law violations	475,000	475,000
Cash discounts	40,000	40,000
Contributions to cities withheld	250,000	250,000
Interest on loan of bond funds	245,000	.....
Subtotals	$ 60,730,000	$ 62,035,000
Less contributions to State Police	2,205,000	2,375,000
Less contributions to counties	11,424,000	11,718,000
Less contributions to cities	6,012,000	6,167,000
Subtotals, contributions	$ 19,641,000	$ 20,260,000
Net receipts of state funds for highway purposes	$ 41,089,000	$ 41,775,000
Cooperative Funds		
Federal cooperative funds	$ 65,115,000	$ 48,625,000
County cooperative funds	770,000	790,000
Miscellaneous cooperative funds	400,000	350,000
City cooperation on city allotment projects	25,000	30,000
Subtotals, cooperative funds	$ 66,310,000	$ 49,795,000
Totals, All Estimated Receipts	$107,399,000	$ 91,570,000
Balance on hand, beginning of year	$ 25,754,000	$ 5,888,000

Anticipated Incomes, 1959 and 1960

State Highway Department incomes for the calendar years 1959 and 1960 are estimated at $107,399,000 and $91,570,000 respectively. The amounts of federal-aid included in these incomes are $65,115,000 in 1959 and $48,625,000 in 1960. The higher collection of federal-aid in 1959 was the result of bond funds having been available that year to supplement current income in the matching of federal-aid. Detailed statements of the expected incomes during 1959 and 1960 are given in the accompanying Table X.

Expenditures, 1957 to 1960

In accompanying Tables XI and XII, the expenditures for 1957 and expected expenditures for 1958, 1959 and 1960 are shown to be as follows:

1957	$ 69,379,000
1958 (Estimated)	74,114,000
1959 (Estimated)	127,265,000
1960 (Estimated)	93,138,000

The normal annual expenditure of the Department, when operating without bond funds and with motor vehicle revenues at the rates obtained in 1958, is about $85,000,000. It was low in 1958 due to labor strikes. It is to be high in 1959 and 1960, due to bond funds with which to match federal-aid and with which to carry-on a bond construction program in Curry County being available during those years.

Near Halfway on the relocated unit of the Baker-Homestead Highway. Construction by Idaho Power Company.

TABLE XI

Expenditures for Calendar Years 1957 and 1958

Class of Expenditures	1957 Actual	1958 Estimated
Capital Outlays		
Federal-aid construction projects	$ 32,455,018	$ 31,295,000
Bond construction projects	1,498,491	4,150,000
State construction projects	1,741,950	530,000
City allotment projects	267,713	300,000
Cooperation in forest road work	6,462	1,000
Minor betterments	720,973	800,000
Surveys	1,560,194	1,634,000
Property acquisition, general expense	144,452	132,000
Purchase of rights of way, quarries, etc.	4,791,420	7,655,000
Purchase of parks	18,550	57,000
Improvement of parks	708,069	873,000
Improvement of maintenance stations, shops, etc.	439,003	586,000
Equipment purchases less sales and depreciation	328,967	696,000
Subtotals, capital outlays	$ 44,681,262	$ 48,709,000
Maintenance		
Contract maintenance	$ 424,090	$ 300,000
General maintenance, primary	8,891,275	9,107,000
General maintenance, secondary	2,970,063	3,006,000
County road signs, etc.	33,097	36,000
Maintenance supervision	405,839	451,000
Subtotals, maintenance	$ 12,724,364	$ 12,900,000
Miscellaneous		
Administration and general supervision	$ 2,497,061	$ 2,656,000
Planning and traffic surveys	940,917	798,000
Travel information division	302,375	310,000
Radio communication system	85,004	96,000
Truck load inspection and permit division	569,193	649,000
Operation of parks	528,159	560,000
Maintenance station and truck scale upkeep	156,870	146,000
Operation of drawbridges and ferries	314,347	387,000
Contributions to retirement funds	635,910	732,000
Miscellaneous expense	118,665	221,000
Service and clearing accounts	607,508	200,000
Bond interest and maturities	5,217,368	5,750,000
Subtotals, miscellaneous	$ 11,973,377	$ 12,505,000
Totals, all purposes	$ 69,379,003	$ 74,114,000

TABLE XII

Anticipated Expenditures for Calendar Years 1959 and 1960

Class of Expenditures	1959	1960
Capital Outlays		
Federal-aid construction projects	$ 70,300,000	$ 41,900,000
Bond construction projects	6,300,000	3,000,000
State construction projects	850,000	850,000
City allotment projects	275,000	275,000
Minor betterments	925,000	925,000
Surveys	1,759,000	1,847,000
Property acquisition, general expense	150,000	150,000
Purchase of rights of way, quarries, etc.	16,387,000	13,687,000
Purchase of parks	60,000	100,000
Improvement of parks	1,010,000	1,059,000
Improvement of maintenance stations, shops, etc.	1,368,000	615,000
Equipment purchases less sales and depreciation	1,110,000	803,000
Subtotals, capital outlays	$100,494,000	$ 65,211,000
Maintenance		
Contract maintenance	$ 400,000	$ 400,000
General maintenance, primary	9,320,000	9,780,000
General maintenance, secondary	3,080,000	3,230,000
County road signs, etc.	40,000	42,000
Maintenance supervision	470,000	490,000
Contingencies, maintenance	100,000	100,000
Subtotals, maintenance	$ 13,410,000	$ 14,042,000
Miscellaneous		
Administration and general supervisions	$ 2,892,000	$ 2,978,000
Planning and traffic surveys	927,000	932,000
Travel information division	400,000	330,000
Radio communication system	123,000	127,000
Truck load inspection and permit division	703,000	724,000
Operation of parks	585,000	617,000
Maintenance station and truck scale upkeep	147,000	151,000
Operation of drawbridges and ferries	355,000	362,000
Contributions to retirement funds	887,000	957,000
Increase in revolving fund	500,000	.....
Miscellaneous expense	164,000	177,000
Service and clearing accounts	.....	.....
Bond interest and maturities	5,678,000	6,530,000
Subtotals, miscellaneous	$ 13,361,000	$ 13,885,000
Totals, all purposes	$127,265,000	$ 93,138,000

Federal Participation in Financing of State Highway Work

Nearly all of the construction work being performed under the direct control and supervision of the State Highway Commission is financed in part with funds provided by the Federal Government. Federal funds thus utilized are of several classes, each class being subject to such special use and to such special limitation and control as may be specified for it by the Congress. The several classes that are currently active are as follows:

1. Federal-aid Primary Highway Funds
2. Federal-aid Secondary Highway Funds
3. Federal-aid Urban Highway Funds
4. Federal-aid Interstate Highway Funds

The first three classes of the currently active funds have been made available year after year for many years with few changes in bases of application. The first authorization of funds for the fourth of the four classes mentioned was made in the Federal-aid Highway Act of 1952. Authorizations were continued in small amounts from 1952 to 1956 when authorizations were made in greatly increased amounts for an Interstate Highway Program to extend over a period of thirteen years with the expectation that such program would construct to freeway standards a 40,000-mile system of Interstate Highways.

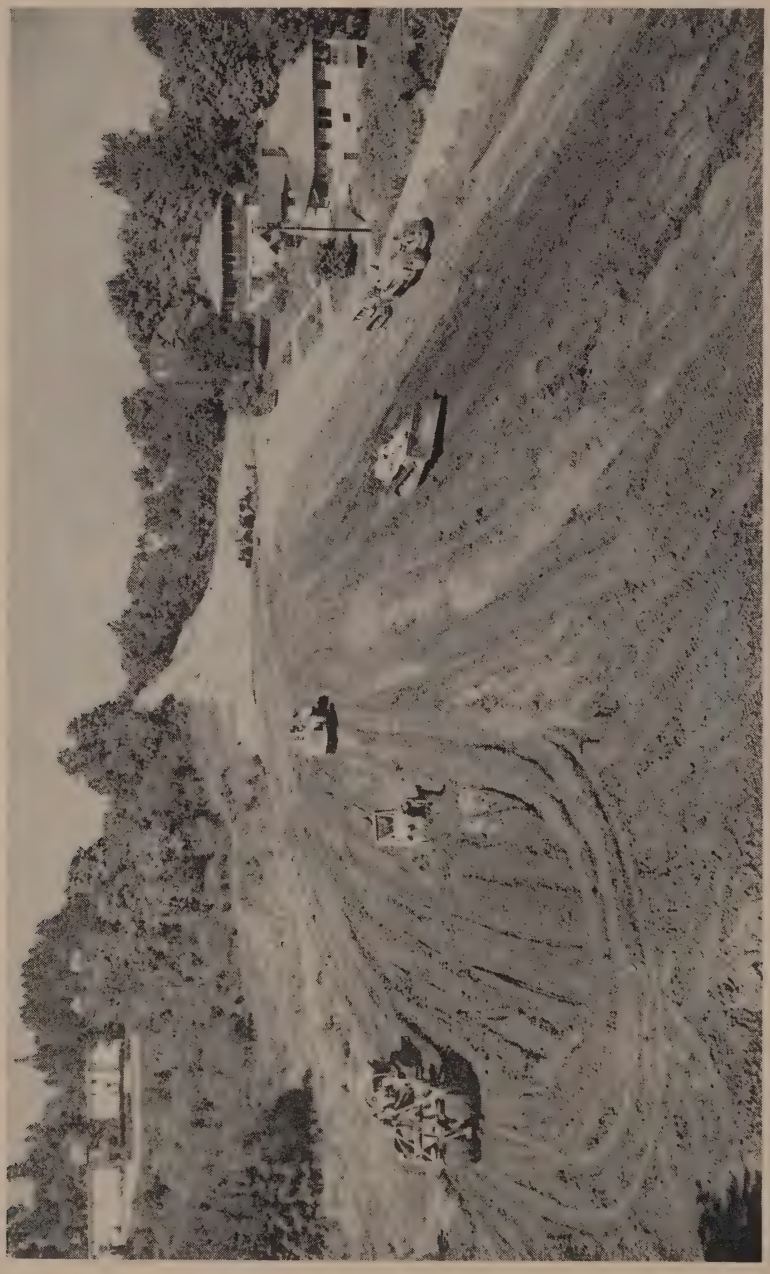
The overall amounts of several classes of funds available to the states during a given fiscal year are fixed by Congress. These overall amounts are then apportioned to the individual states in accordance with established formulae. No state may receive more of any class of federal funds than is thus apportioned to it.

The extent of federal participation in the costs of projects of primary, secondary or urban classification is, basically, fifty per cent. However, in those states in which more than five per cent of the land area is unappropriated and unreserved public land and nontaxable Indian land, the ratio of federal participation is increased on a proportionate basis with the result that federal participation in Oregon is at the rate of 61.90 per cent. For projects of interstate classification, the

TABLE XIII

Federal Aid Funds and Forest Road Funds

Period for Which Funds Are Apportioned	Federal Aid Funds	Forest Road Funds	Total
Total of prior apportionments	$136,598,494.24	$ 46,382,070.89	$182,980,565.13
Act of May 6, 1954:			
July 1, 1955 to June 30, 1956			
Federal-aid primary funds	5,398,620.00	3,098,057.00	8,496,677.00
Federal-aid secondary funds	3,772,987.00	.....	3,772,987.00
Federal-aid urban funds	1,387,166.00	.....	1,387,166.00
Federal-aid interstate funds	2,330,696.00	.....	2,330,696.00
July 1, 1956 to June 30, 1957			
Federal-aid primary funds	5,410,740.00	3,098,378.00	8,509,118.00
Federal-aid secondary funds	3,781,446.00	.....	3,781,446.00
Federal-aid urban funds	1,390,696.00	.....	1,390,696.00
Federal-aid interstate funds	2,336,162.00	.....	2,336,162.00
Act of June 29, 1956:			
July 1, 1956 to June 30, 1957			
Federal-aid primary funds	947,228.00	.....	947,228.00
Federal-aid secondary funds	662,937.00	.....	662,937.00
Federal-aid urban funds	252,043.00	.....	252,043.00
Federal-aid interstate funds	13,575,755.00	.....	13,575,755.00
July 1, 1957 to June 30, 1958			
Federal-aid primary funds	6,441,151.00	4,132,640.00	10,573,791.00
Federal-aid secondary funds	4,507,969.00	.....	4,507,969.00
Federal-aid urban funds	1,713,893.00	.....	1,713,893.00
Federal-aid interstate funds	23,078,783.00	.....	23,078,783.00
July 1, 1958 to June 30, 1959			
Federal-aid primary funds	6,518,788.00	4,306,115.00	10,824,903.00
Federal-aid secondary funds	4,565,092.00	.....	4,565,092.00
Federal-aid urban funds	1,755,480.00	.....	1,755,480.00
Federal-aid interstate funds	26,814,715.00	.....	26,814,715.00
Act of April 16, 1958:			
July 1, 1958 to June 30, 1959			
Federal-aid primary funds	2,994,992.00	688,773.00	3,683,765.00
Federal-aid secondary funds	2,097,386.00	.....	2,097,386.00
Federal-aid urban funds	806,538.00	.....	806,538.00
Federal-aid interstate funds	2,694,946.00	.....	2,694,946.00
July 1, 1959 to June 30, 1960			
Federal-aid primary funds	6,789,530.00	4,545,904.00	11,335,434.00
Federal-aid secondary funds	4,751,847.00	.....	4,751,847.00
Federal-aid urban funds	1,805,637.00	.....	1,805,637.00
Federal-aid interstate funds	43,108,375.00	.....	43,108,375.00
Totals	$318,290,092.24	$ 66,251,937.89	$384,542,030.13



R. H. Baldock Freeway in Portland, future 6-lane unit of Interstate Route.

basic rate of federal participation in cost is ninety per cent but in Oregon the rate is 92.38 per cent.

Federal funds for highway work are not turned over to the states in advance of construction. Instead, they are paid to the states in the form of reimbursement during and after the period that the work is in progress. They are paid only on projects for which the plans have been previously approved by the Bureau of Public Roads and for which the work is conducted in accordance with applicable requirements established by the Bureau of Public Roads.

Federal-aid apportioned to a state must be placed under contract within two years after the close of the fiscal year for which the apportionment is made. Amounts not so contracted revert to the federal government to be redistributed among all of the states. Under this arrangement, the State has about three and one-half years in which to use the apportionment for a given year.

Oregon's allotments of federal-aid for each of the fiscal years 1958, 1959 and 1960 are as follows:

	1958	1959	1960
Primary Funds	$ 6,441,151	$ 6,518,788	$ 6,789,530
Secondary Funds	4,507,969	4,565,092	4,751,847
Urban Funds	1,713,893	1,755,480	1,805,637
Interstate Funds	23,078,783	29,509,661	43,108,375
	$35,741,796	$42,349,021	$56,455,389

The classes of projects to which the use of the several kinds of federal funds are limited are as described in the paragraphs which follow:

Federal-aid Primary Highway Funds: Federal-aid primary highway funds can be applied only on permanent improvement projects on highways included in the Federal-aid Primary Highway System or the Federal-aid Interstate Highway System. A map of the Federal-aid Primary Highway System accompanies this report, and in the accompanying Table III there are given the numbers, names, and lengths of the highways which comprise the system. The total mileage of federal-aid primary highways is 3,892 miles, which is approximately 80 per cent of the total mileage in the Primary State Highway System.

Federal-aid Secondary Highway Funds: Federal-aid secondary highway funds are available for use only on state highways and county roads included in the Federal-aid Secondary Highway System. This system includes at present 7,365 miles of highways of which 881 miles are primary state highways, 2,574 miles are secondary state highways and 3,910 miles are county roads. A statement of the FAS mileage on both the local road system and the state system is given in accompanying Table IV.

Federal regulations require that at least fifty per cent of available federal-aid secondary highway funds be used on the county road portions of the secondary system.

Federal-aid Urban Highway Funds: The use of federal-aid urban highway funds is limited to those streets and highways within approved urban areas of cities having populations greater than 5,000 which are extensions of or portions of Federal-aid Primary Highways or Federal-aid Secondary Highways. The areas together with the mileages of primary and secondary highways within each are as follows:

Urban Area	Miles Primary Highways	Miles Secondary Highways	Urban Area	Miles Primary Highways	Miles Secondary Highways
Albany	3.22	0.73	McMinnville	3.45	1.50
Ashland	4.22	.....	Medford	6.09	3.59
Astoria	6.16	1.34	Milwaukie	1.92	1.09
Baker	6.44	3.42	North Bend	2.74	2.31
Bend	4.41	3.21	Oregon City	2.26	2.01
Coos Bay	2.45	2.31	Pendleton	7.28	1.25
Corvallis	6.28	0.23	Portland	130.70	11.75
Eugene	6.72	10.37	Roseburg	2.94	8.20
Grants Pass	5.00	1.24	Salem	8.15	8.11
Hillsboro	2.80	4.18	Springfield	2.27	2.53
Klamath Falls	6.02	4.38	The Dalles	5.01	2.25
La Grande	2.11	0.90			
Lebanon	1.52	1.54	Totals	230.16	78.44

Federal-aid urban funds allotted to Oregon for the fiscal years 1954 to 1960 are as follows:

Fiscal year 1954	$1,076,050
Fiscal year 1955	1,081,596
Fiscal year 1956	1,387,166
Fiscal year 1957	1,642,739
Fiscal year 1958	1,713,893
Fiscal year 1959	1,755,480
Fiscal year 1960	1,805,637

Federal-aid Interstate Highway Funds: Federal-aid interstate highway funds may be used only on those few most important highways which have been designated as parts of the Federal-aid Interstate Highway System. In Oregon, the highways on the interstate system are:

1. The Pacific Highway from the California state line south of Ashland to the Washington state line south of Vancouver, Washington. Interstate Route 5.
2. The Columbia River Highway and the Old Oregon Trail from Portland to the Idaho state line near Ontario. Interstate Route 80 N.
3. The Umatilla-Stanfield Highway from the Washington state line near Umatilla to a junction with the Old Oregon Trail near Stanfield. Interstate Route 82.
4. The Stadium-Sunset Loop in Portland. Interstate Route 405.
5. The Laurelhurst Loop in Portland. Interstate Route 205.
6. A connecting spur at Salem. Interstate Route 305.
7. A connecting spur at Eugene. Interstate Route 105.

Public Lands Highway Funds: Public lands highway funds may be used for work on unappropriated and unreserved public lands, non-taxable Indian lands, or other federal reservations other than forest reservations. The locations in Oregon at which these funds can be used advantageously are in the public land areas in the southeastern portion of the state, in the Warm Springs Indian Reservation and the Klamath Indian Reservation. Use of the funds has been confined, so far, to the I. O. N. Highway, the Crane-Scotts Butte Highway, the Warm Springs Highway, the Central Oregon Highway, the Klamath Falls-Lakeview Highway and the Burns-Lakeview Highway.

Public lands highway funds may be applied on a 100 per cent basis on those parts of public lands highway projects which are within the limits of public lands of the kinds mentioned in the preceding paragraph. None can be applied on such portions of projects as are on privately-owned lands or state-owned lands.

Forest Highway Work

Federal forest highway work, unlike federal-aid highway work is performed under the direct supervision of the Federal Bureau of Public Roads. The State Highway Commission has a voice in the selection of projects and in the types and standards of construction, and sometimes has charge of the making of surveys, but does not in any other respect participate in the direction and performance of the work. The Bureau of Public Roads awards the construction contracts, engineers the work, pays the contractor and does all other things necessary to bring the work to satisfactory completion.

Federal allotments for forest highways have been made more or less regularly since 1916 and have been distributed among the states in proportion to areas and values of the national forest lands within the states. Allotments for work in Oregon during the fiscal years 1956 to 1960 are as follows:

Fiscal year 1956	$3,098,057
Fiscal year 1957	3,098,378
Fiscal year 1958	4,132,640
Fiscal year 1959	4,994,888
Fiscal year 1960 (Approx.)	4,500,000

Use of forest highway funds is limited to work on the Forest Highway System, which system has been arrived at by mutual agreement between the Bureau of Public Roads, the National Forest Service, and the State Highway Commission. It includes only roads which are within or near National Forests. A listing of the roads in the system appears in accompanying Table V. Most, but not all, of the roads included are state highways.

Financial cooperation in forest highway work by the State or by counties is not required but is sometimes given. In all cases, the cost of right of way across lands now owned by the Federal Government is borne by the State or, if the road is a county road, by the county.

County and City Participation in Revenues from Motor Vehicle Imposts

Revenues from motor vehicle imposts are used first of all to pay refunds allowable under the provisions of the laws and

to defray expenses incurred by the Department of Motor Vehicles and the Public Utilities Commissioner in making collections of the revenues and in performing certain administrative and enforcement duties with which they are charged. The balances remaining after payment of the refunds and expenses mentioned, are allotted as follows:

To Counties	19.0%
To Cities	10.0%
To State Police Department—A monthly allowance fixed by the State Legislature, which amount at present approximates	3.0%
To Highway Commission—The balance remaining after payment of above listed allotments, which balance approximates	68.0%

County Participation in Income: The counties' share of motor vehicle imposts is distributed among the counties in proportion to the numbers of motor vehicles of all kinds registered from the respective counties during the preceding year. The distribution is made on a quarterly basis, the quarterly periods ending on March 31, June 30, September 30 and December 31. The total amount of each quarterly distribution is 19 per cent of the motor vehicle revenues credited to the State Highway Fund during the quarter. Distribution of each quarterly share is made to the counties on or before the last day of the month which follows the ending month of the quarter.

Funds received by the counties from this source are required by law to be used for the following purposes, preferentially in the order in which they are listed.

1. In payment of interest and principal on bonds issued for the purpose of road construction and improvement, unless other provision has been made for such payment.
2. In payment of the cost of preparing the roadbed, bridges, etc., for the construction of state highways, as provided by law, unless other provision has been made for payment of such cost.
3. In any other manner for general road improvement, at the discretion of the county court.

For detail as to the extent to which the counties have participated in these revenues, see Table VI in Section Two and Table No. 28 in Section Three of this report.

City Participation in Income: Of the cities' 10 per cent of the motor vehicle revenues, $250,000 is, each year, held in the State Highway Fund for expenditure on city streets by the State Highway Commission as hereinafter explained. The remainder of the cities' 10 per cent is distributed among the cities of the State in proportion to population with the proviso that for any city having a population greater than 100,000, only two-thirds of such city's population is to enter into the calculation. The distribution is made on a semi-annual basis, the semi-annual periods ending on June 30 and December 31. The total amount of each semi-annual distribution is $125,000 less than 10 per cent of the motor vehicle revenues credited to the State Highway Fund during the semi-annual period. Distribution of each semi-annual share is made to the cities immediately following the close of the semi-annual period.

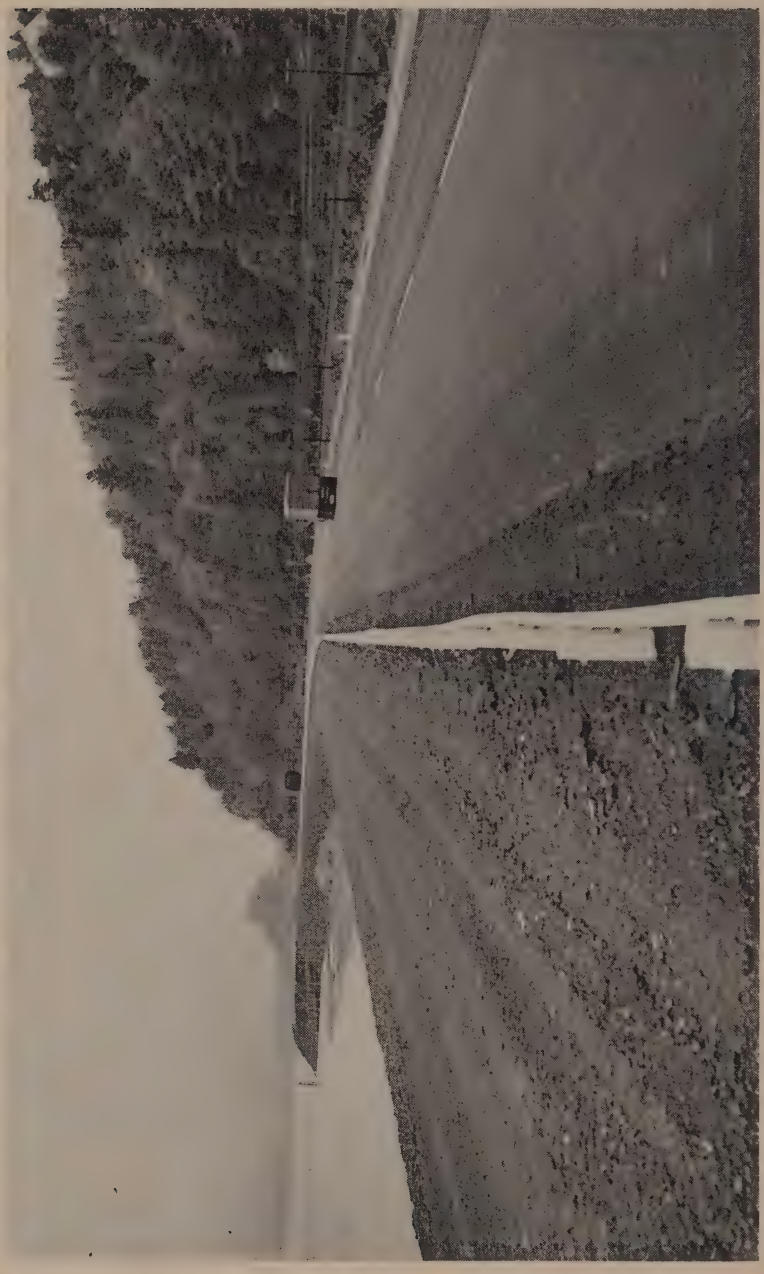
Moneys distributed to the cities as above described are required by law to be used "for constructing, reconstructing, improving, repairing, or maintaining city streets which have not been designated as connecting links between state highways by the state highway department in the manner provided by law." Expenditure of the moneys by cities may be deferred more than two years only when such deferment is approved by the State Highway Engineer.

Information as to the amounts the cities have received under the above described distribution of motor vehicle revenues is given in Table VI and Table No. 26 of this report.

The $250,000 which is held in the State Highway Fund each year for expenditure by the Highway Commission on work on city streets as required by law to be expended "upon streets not a part of the state highway system within cities which are receiving excessive wear through sudden increases in population in the area or heavy and unusual industrial traffic." Determination of the distribution of the expenditures to be thus made by the Highway Commission is required to be made by the Highway Commission "after considering applications made to it therefor from the cities."

In its distribution of $250,000 annually available for expenditure, the Highway Commission has found it necessary to restrict its allocations to cities of populations less than 5,000, and to fix the sum of $20,000 as the maximum to be expended on any one project. In a number of cases, the cities contributed additional funds or work to supplement the amounts allotted from the $250,000 fund.

The amounts that have been expended from city allotment fund withholdings since the beginning of the withholding procedure are as shown in Table 27 of Section Three of this report.



Sundial-Rooster Rock Section of U.S. 30 in Multnomah County.

REPORT OF CONSTRUCTION DIVISION

TOM EDWARDS, *Construction Engineer*

The Construction Division has the assigned mission of preparing location plans for all highways, urban and rural, within the state and the supervision of all grading and paving construction work. This activity has many facets. The work requires advance planning for the highway program, the preparation of tentative programs for the consideration of the Highway Commission and upon their approval, the making of surveys, the design of interchanges, the design of rural and urban projects, the instigation of agreements with utility organizations concerning the rearrangement of their facilities, such as power companies, railroad companies, et cetera. The Division also renders consultant service to other branches of state government, mainly in the field of geology and soils work. The Division is subdivided into ten sections comprising planning, reconnaissance, photogrammetry, urban design, rural design, right-of-way descriptions, soils and geology, cost analysis, office and field construction and the metropolitan construction section in the Portland area. Each of these sections performs one of the phases of highway planning and construction.

The passage of the 1956 and 1958 federal highway acts added greatly to the Construction Division operations in that it became immediately necessary to:

1. Prepare reconnaissance-type studies and cost estimates on the basis of established line and grade reconnaissance surveys and right-of-way cost estimates for the entire interstate system in the State of Oregon.
2. Prepare needs study estimates for the other federal aid systems within the state.
3. Prepare an incremental design study correlating construction costs to standards of design for various weights of vehicles.
4. Prepare a cost study of the entire forest highway system within the state.

The first three of these studies have been completed. The last is in progress.

Due to the 1956 and 1958 federal aid highway acts the volume of construction rose sharply in the latter part of the biennium. While the number of contracts for the biennium was 314 compared to the last biennium's 304, the contract amounts have risen from $40,633,700 to $66,703,200, or nearly 65 per cent. This increase has made it necessary for the Construction Division to expand all of organizational sections and to make major policy changes to insure proper location and design of new projects. In addition, the mechanics of project planning has become more complex.

The number of contracts awarded during the biennium for different classes of funds has been as listed below. The per cents of increase in dollar volume over the previous biennium are also indicated.

Federal Aid Interstate	44	$29,145,200	568%
Federal Aid Primary	28	13,201,600	17%
Federal Aid Urban	13	2,084,700	16%
Federal Aid Secondary	66	10,251,800	14%
Bond Projects	4	5,416,400	–20%
State Financed Projects	155	6,079,800	–10%
Public Lands Projects	1	295,500	–45%
Projects for Other Agencies	3	228,200	.....
Total	314	$66,703,200	64%

All of the contracts covered in the above listing were for projects under the direct supervision of the Construction Division and do not include contracts assigned to the Bridge Division. A brief resumé of some of the more important construction in progress during the biennium follows:

Federal Aid Interstate Construction

1. Pacific Highway—The grading on the Harbor Drive-Washington County Line Section of the R. H. Baldock Freeway is nearly all under contract and the remainder of the necessary projects to complete the section are scheduled for contracting before July, 1959. The Salem By-pass Section of the R. H. Baldock Freeway is being expanded to four lanes under present contract and will be completed in 1959. The Pacific

Highway from Battle Creek Junction, south of Salem, to Albany has been reconstructed to four lanes. The grading sections from Albany to Eugene are now under contract and the remaining work is expected to be placed under contract during the next biennium. The section Myrtle Creek to Canyonville is completed. The Jumpoff Joe Creek-Grants Pass Section is completed. The grading on the Grants Pass-Rock Point and Seven Oaks-Medford Sections of the highway will be contracted in late 1958 or in 1959 and is planned to be completed during the next biennium.

2. Columbia River and Old Oregon Trail Highways—The section from Union Avenue in Portland to Sundial is completed to freeway standards. Grading contracts have been awarded for four-laning the Sundial-Dodson Section and contracts to complete the paving to Dodson are scheduled for the spring of 1959. Grading from Cascade Locks to Wyeth will be contracted in 1959. Grading on the Hood River-Shogren Section is now scheduled. The section from Shogren to Chenoweth Creek will be completed during the coming biennium. The Chenoweth Creek-The Dalles Section is now completed. An agreement with the City of The Dalles on the location of the The Dalles-Big Eddy Section will release this unit for contracting and the grading may be contracted by the summer of 1959. The design of the Rufus-Boardman Section is nearing completion by agreement between the Highway Department and the Corps of Engineers, U. S. Army. This section will have to be constructed before completion of the John Day Dam. The grading of the Old Oregon Trail from Emigrant Hill to La Grande is all under contract. Paving of the Emigrant Hill-Deadmans Pass Section is completed. Paving of the remaining sections will be undertaken during the coming biennium. The Baker-Pleasant Valley Section will be graded in 1959. The Baker County Line-Ontario Section is completed and the grading of the Ontario-Idaho Line Section is under contract.

Federal Aid Primary Construction

A large grading project on the Oregon Coast Highway is the section from Davis Slough, south of Coos Bay, to Bandon. This project by-passes Coquille and will save approximately twelve miles of travel distance for traffic between Coos Bay and Bandon. Grading is all under contract and surfacing should be completed in 1960.

A four-lane highway is being constructed on the Mt. Hood Highway between Sandy and Alder Creek that will eliminate congestion caused by heavy week end traffic.

Reconstruction on the Lower Columbia River Highway between Goble and Tide Creek is completed. The section from Wauna to Westport is under construction. The Tide Creek-St. Helens Section was completed in the previous biennium.

On the Central Oregon Highway construction is in progress between Juntura and Namorf to improve the substandard grade, alignment and surfacing in the Malheur River Canyon. In addition, a repaving contract west of Brothers was completed on this highway.

The Willowdale-Lyle Gap Section of The Dalles-California Highway was completed. This project involves new alignment that eliminates several miles of substandard highway.

Grading has been started on a section of the Corvallis-Newport Highway over Pioneer Mountain. This project involves heavy construction and will not be ready for surfacing until 1959.

The paving on the Dolph Corner-Rickreall Section of the Willamina-Salem Highway was completed and is open to traffic.

Grading is in progress on the section of the Salmon River Highway between Valley Junction and Wallace Bridge. Paving of this section is under contract. From Wallace Bridge to Sheridan the new highway is completed.

The north unit of the Grass Valley-Kent Section of the Sherman Highway was contracted and completed this biennium.

Paving on the Tillamook-Donaldson Creek Section of the Wilson River Highway was completed.

The Pendleton-Pilot Rock Section of the Pendleton-John Day Highway, the middle unit of which was started the last biennium, was completed.

The grading and surfacing of the Minam-Rock Creek Section of the Wallowa Lake Highway was contracted. The new work follows the present highway fairly closely but on greatly improved alignment.

On the Tualatin Valley Highway the sections from Forest Grove to Cornelius and Reedville to Beaverton were completed. The Cornelius-Hillsboro Section, contracted last biennium, was also completed.

The Butte Creek Pass Section of the John Day Highway was completed.

The Muleshoe Creek-Burton Canyon Section of the John Day Highway and the middle unit of the Crescent Lake Junction-The Dalles-California Highway Section of the Willamette Highway were contracted.

Federal Aid Urban Construction

The largest urban project under construction is the Highlands interchange on the Sunset Highway in Portland. Other projects are in North Bend, Ashland, Medford, Grants Pass, Springfield, Salem, Portland, McMinnville and Klamath Falls.

Federal Aid Secondary Construction

Projects in this category are all on federal aid secondary highways, which highways include most of the state secondary highways, many county roads and a few state primary highways. Projects contracted with federal aid secondary funds on state primaries include construction on the following highways: Baker-Homestead, Alsea and Old Oregon Trail (at Nyssa). The largest of these was the east unit of the Black Bridge-Richland Section of the Baker-Homestead Highway. Projects contracted on the state secondary system include

construction on the following highways: Coos River, Paulina, Elkton-Sutherlin, Wasco-Heppner, Richardson-Eugene, North Santiam and Hillsboro-Silverton. The largest of these is on the North Santiam Highway from the Sublimity Gun Club to Stout Creek, which is now open to traffic. Grading is in progress on the remaining section from Salem to the Sublimity Gun Club. The completion of this section will finish the construction of the North Santiam Highway.

Bond Financed Construction

A major project undertaken during the biennium was the location and construction of the Oregon Coast Highway between Gold Beach and Brookings, financed with bond funds authorized by the 1957 Legislature. Contracts have been let for the grading work between Burnt Hill Creek and Brookings, a distance of 15 miles, at an estimated cost of eight and one

West Unit of Mosier-Rowena widened to 4 lanes, U.S. 30 in Wasco County.

half million dollars. This part of the work involves 10,000,000 cubic yards of excavation. It is interesting to note that construction of the present highway involved less than 1,000,000 cubic yards of excavation.

This project, complete with pavement and structures, will cost some $12,600,000. It will effect a distance saving of six miles and will eliminate the long grades and tortuous alignment for which the existing road is notorious.

General Comments

The Construction Division has experienced the most active biennium in the two years just past of any period in the history of the Highway Department. In the furtherance of the expanded program, use is being made of electronic and photogrammetric equipment. Using these methods, highly skilled specialists can prepare data and designs at a greatly increased rate with a consequent saving in man power and money. The Division now owns an aerial camera which was purchased to fit the camera mounts in the plane owned and operated by the State Board of Forestry and with this State-owned equipment, aerial photographs are taken at substantial saving in cost. Two Kelsh plotters are operated on a two-shift basis to reduce aerial photographs into topographic maps for use in highway location.

A planning section has been added to the Construction Division. This section has been charged with the developing and up-dating of the needs surveys and estimates required for our own usage and required by the federal highway acts. A metropolitan section has been activated in the Portland area, as a part of the Construction Division, to handle the construction of the interstate and urban projects in that area.

It has been found that through the steps described, it has been possible to carry the construction program forward well within available man power. The engineering force has not been expanded greatly in numbers but by the use of advanced techniques and by reorganization, it has been possible to keep the construction program on schedule.

New Twin Bridge paralleling existing bridge over Columbia River between Portland and Vancouver, Washington. Constructed by the Washington Toll Bridge Authority.

REPORT OF BRIDGE DIVISION

IVAN D. MERCHANT, *Bridge Engineer*

During the biennium the Bridge Division handled a total of 382 jobs, the largest number in its history. Dollar value of this work, $19,383,400.00, is slightly less than that handled during the past biennium.

A breakdown of the various classes of work handled and structures built or under construction on the State Highway System as follows:

No. of Jobs	Type of Work	Contract Cost
230	New bridges, culverts and highway grade separations	$13,176,372.00
7	Highway/Railroad grade separations	781,334.00
15	Bridges or culverts extended or widened	282,687.00
37	Buildings—all types	535,522.00
32	Miscellaneous contract maintenance projects	226,633.00
61	Miscellaneous (Includes park developments, etc.)	4,390,841.00
382		$19,383,389.00

The Division has continued to give technical assistance to cities and counties on bridge problems. This assistance ranges from on the ground conferences with local authorities concerning particular problems to the actual preparation of construction plans and specifications and the furnishing of same to the city or county in a manner that will permit its calling for bids on the work. Cities are required to pay the actual cost of preparation of plans and specifications. State laws require this same data be furnished the counties without cost. Field engineering, supervision and inspection services on contract construction are furnished to cities and counties on request at actual cost.

Principal projects handled by the Division during the biennium are outlined in the following paragraphs.

By act of the 1957 legislature, the Highway Department was instructed to locate and to prepare a preliminary design and estimate of cost for a bridge crossing the Columbia River between Megler, Washington and Astoria, Oregon. These

things have been done and the resultant information is ready for use by the 1959 legislature.

The new bridge over the Columbia River at Portland (see pages 138 and 139 of the 54-56 biennial report) was completed on schedule and opened to traffic on July 1, 1958. A contract for reconstruction of the existing bridge in the amount of $2,993,995.00 was awarded to the General Construction Company of Portland, Oregon, on May 28, 1958. The contractor started work on the contract on June 16, 1958. The work is scheduled for completion December 31, 1959. On completion of reconstruction of the existing bridge the final plan for traffic (3 lanes northbound on the East Bridge and 3 lanes southbound on the West Bridge) will be effected.

Preparation of plans and specifications for projects involved in construction of the Interstate system to freeway standards continues to occupy a major part of the Bridge Division's time and personnel in both office and field. Six contracts involving seven structures at a contract cost of $1,759,263.00 were awarded for grade separation structures on the Harbor Drive-Washington County Line Section of the R. H. Baldock Freeway in the West Portland area. Eight contracts involving 36 structures at a contract cost of $2,860,984.00 were awarded for grade separation and drainage structures on the Jefferson Junction-Judkins Point Section of the Pacific Highway in Marion, Linn and Lane Counties. Four contracts involving 11 structures at a contract cost of $498,728.00 were awarded for highway and railroad grade separations and drainage structures on the Salem By-Pass Section of the Pacific Highway in Marion County.

Refinements in the manufacture of the principal materials used in bridge construction; namely, concrete, metal reinforcing and structural steel, permits the use of design types and construction not generally in use in the past. Developments in the manufacture and use of concrete and high stress stranded steel wire permit the use of precast, pretensioned or post-tensioned concrete structures of span lengths considerably longer than those using conventional materials. The steel industry is producing a heavy structural steel readily weldable, thus permitting the use of welding in the construction of

steel spans. These materials are used in bridge design and construction whenever it is economically possible to do so.

The high-speed electronic computer now in use by the Highway Department is ideally suited to certain routine calculations in bridge design. Also, the great increase in numbers of highway structures required in the present Federal Aid Highway Program has favored as much standardization as possible, and the most efficient use of the engineer's time. At the present, complete design analyses of prestressed bridges and multi-span steel or reinforced concrete structures through use of the electronic computer. Bridge layout problems are also solved advantageously by the computer. Thus the high-speed electronic computer has proved to be very useful to the Bridge Division both in man-hours of time saved and in completeness and preciseness of information provided.

The number of Bridge Division employees has increased during the past two years from 110 to 146, the additional personnel being required to handle the heavier work load occasioned by the expanded construction program. Of this personnel, 83 are Resident Bridge Engineers and their assistants working in the field. Also working in the field are two foundation crews of two men each and a timber boring crew of two men. The office force, with positions of structural designers, structural draftsmen, specification writers and office engineers, totals 52 and the clerical force totals five. Bridge Division activities were under the direct supervision of P. M. Stephenson until December 31, 1957, at which time he was advanced to the position of Assistant State Highway Engineer. The vacancy created by Mr. Stephenson's promotion was filled on January 1, 1958, by the appointment of Ivan D. Merchant. Working directly under Mr. Merchant, as Assistant Bridge Engineer, are E. G. Ricketts in charge of construction and T. C. Roake in charge of design.

Reconstructed U.S. 99 4-lane concrete divided highway at Talbot Road Jct. south of Salem, near completion.

REPORT OF MAINTENANCE DIVISION

I. A. DeFRANCE, *Maintenance Engineer*

Highway maintenance is technically that work that is necessary to preserve the highway to the standard to which constructed, but ordinarily it is considered to include also, traffic service or "operation" activities necessary to facilitate the safe flow of traffic at all times such as snow plowing, sanding icy pavements, painting traffic lines, operating traffic signals, operating drawbridges and ferries, the flagging and signing of slides, washouts, floods, etc.

Other supplemental Maintenance Division activities include:

1. Operation of a self-supporting Equipment Department that provides cars, trucks, graders, and other highway maintenance equipment on a rental basis and that operates efficient repair shops and stock rooms at strategic locations throughout the State.
2. Maintenance and operation of a short wave radio system to facilitate communication for both Highway and State Police Departments.
3. Publishing and broadcasting a daily road condition and weather report during winter weather.
4. Operation of a system of field reports of accidents and office preparation of claims and billings for damage to highways, highway structures, and equipment that permits our Legal Division to recover damages that were in excess of $44,000 in 1957.
5. Operation of a Property Control system that protects and preserves the Highway Department investment in small tools and miscellaneous property.
6. Maintenance and operation of the following types of buildings throughout the State:
   a. Office buildings for the accommodation of district and division offices of the Highway Department, the State Police, the Motor Vehicle Division, and the Public Utilities Commissioner.
   b. Garage, shop, and storage buildings.
   c. Truck scales and service stations.

d. Residences for maintenance employees at mountain summits and other isolated locations.

7. Conduction of a safety program designed to promote safe operation of cars and road maintenance equipment and the prevention of accidents and personal injury.

Weather is an important factor in highway maintenance and heavy rains, cloudbursts, floods, washouts, slides, heavy snowfall, ice, extreme cold and frost, all aggravate the difficulties and multiply highway maintenance and traffic service costs. The past biennium was favored with moderate weather with no disastrous storms or extremes of cold, rain, or snow. On the mountain passes accumulated snow was considerably less than the record depths piled up during the winter of 1955-56. Roadside snow on four mountain passes receiving heaviest snowfall reached maximum depths during March, 1956, 1957, and 1958 as follows:

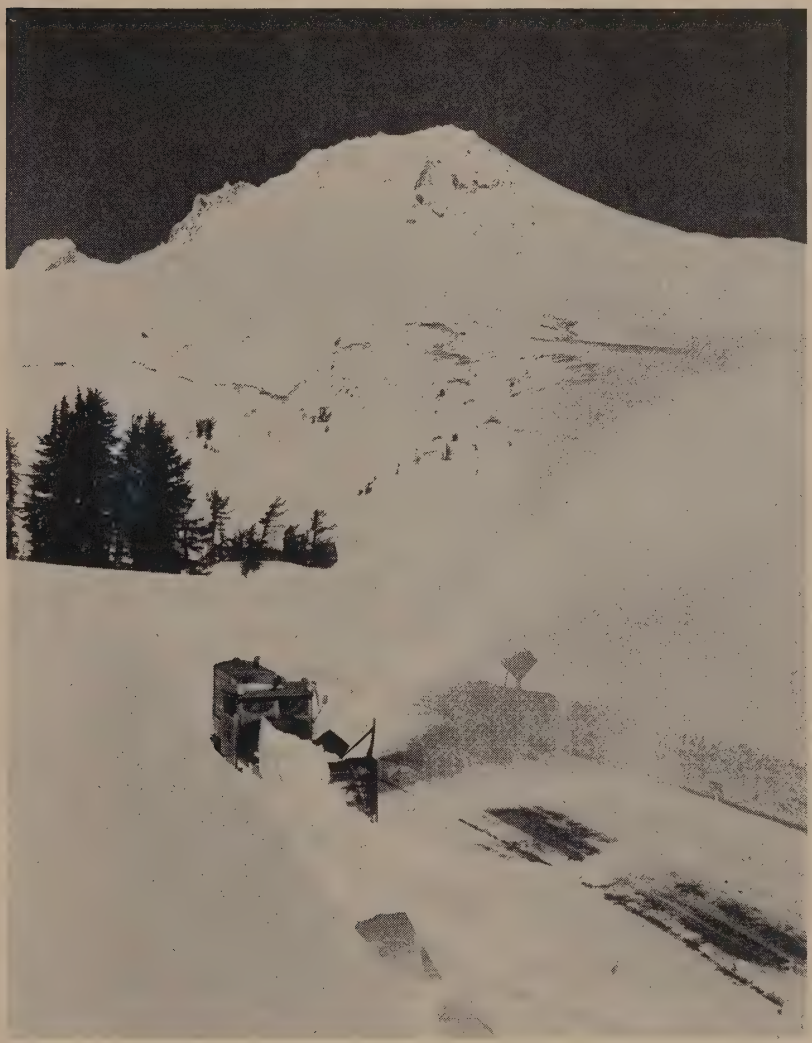
Location	1956	1957	1958
Government Camp	180″	65″	45″
Timberline Lodge	330″	192″	264″
Santiam Pass	210″	102″	117″
Willamette Pass	169″	86″	88″

Mountain passes which were kept open all winter are Siskiyou, Wapinitia (Blue Box), Santiam, Willamette, Green Springs, Blue Mountain, Dixie Mountain, and Canyon Creek north of Seneca. On the other hand, the McKenzie pass, the Mt. Hood Loop pass east of Government Camp, and the Diamond Lake pass are allowed to close each winter and are opened as early each spring as is found practicable.

Snow removal equipment includes 34 rotary snow plows, 537 blade plows, and 25 power graders with serrated blades for packed snow and ice; and 365 sanders.

The milder winter of 1957-58 resulted in a decrease in the amount of snow plowing and sanding required; for example, during the winter of 1956-57, it was necessary to do some snow plowing on 7,110 miles, or 97.4% of the State Highway system, while during the winter of 1957-58, plowing was necessary on

only 4,039 miles. There has been an increased demand for sanding of packed snow and icy surfaces. A maximum 3/8″ size aggregate is used together with calcium chloride and salt to prevent aggregate from freezing and to increase efficiency. The amount of sanding material used the last three winters is: 1955-56, 88,962 cubic yards; 1956-57, 102,663 cubic yards; 1957-58,



Snow is being removed from the Timberline Highway on Mt. Hood.

65,264 cubic yards. The combined cost of snow removal and sanding for the last three winters is: 1955-56, $1,910,086; 1956-57, $1,651,905; and 1957-58, $1,335,514. Snow removal and sanding costs go on whether there is heavy snow fall or not for snow plowing and sanding equipment and operators are on the job ready for every emergency, the same as policemen or firemen.

Sand sheds have been built on summits and at strategic locations where dry unfrozen sand is stored for use by local workmen who keep traffic moving day and night whatever the weather or the cost.

Organization

Routine highway maintenance work is performed by Section Crews, 133 in number, each responsible for certain sections of highway near their headquarters. Each Section Crew is headed by a Section Foreman. Several Section Crews are supervised by a District Maintenance Superintendent, and in turn, 3 or 4 District Maintenance Superintendents and their Section Crews are supervised by a Division Engineer.

The Section Crews, under the supervision of the District Maintenance Superintendent, carry on routine maintenance and operation activities that aim to protect the roadway and roadside from deterioration, to provide a safe, smooth surface, and a pleasant roadside at all times for tourist and local traffic alike. They repair the roadway surface to keep it smooth for traffic and to protect it against damage from heavy wheel loads. They clean ditches and culverts to facilitate rapid run-off and protect the highway grade against poor drainage, seepage, and softening of the sub-grade. They remove fallen rocks, trees, and slides to reduce the danger to the traveling public and to keep drainage open. They clean up trash and litter to keep the roadsides attractive looking. They sweep pavement, intersections, and bridges. They cultivate and care for shrubs, trees, and grass, not only for a pleasant appearance but to prevent washing and scouring of slopes. They spray noxious weeds to prevent them from spreading to neighboring fields and foster the growth of sod which deters noxious weed growth. They remove danger trees and trim trees and shrubs that restrict sight distance. They maintain and service roadside

rest areas, park roads, and parking areas. They patrol their sections during stormy weather and warn motorists of danger from slides, washouts, high water, and other hazards that arise. They plow snow and sand icy pavement all hours of the day and night, work days, Sundays, and holidays, to facilitate travel in winter weather.

Special extra gang crews for pavement repair, reoiling, bridge repair, building repair, tunnel construction and repair, sign and signal installation and repair, and traffic line striping are organized independently of the section crews and whereas the section crews are employed year round, many of the extra gangs are organized for a few months' work during the summer season, only.

There are 19 District Maintenance Superintendents, 5 Bridge Superintendents, 2 Sign Superintendents, 1 Traffic Line Superintendent, and 1 Electrical Superintendent who organize and supervise the maintenance crews and their equipment, order materials and supplies, and, in general, direct all operations in their respective fields under the direction of the 5 Division Engineers and in cooperation with 3 Assistant Maintenance Engineers assigned to (1) bridges, buildings, drawbridges and ferry; (2) signs, signals, and traffic lines; and (3) paving, reoiling, and other extra gang work. The foremen and superintendents are the representatives of the Highway Department most often contacted by residents and travelers.

The total number of maintenance employees including offices, radio, shops, and field varies during the year:

Date	1954	1955	1956	1957	1958
January 1	1803	1731	1841	1818	1824
July 1	1874	1871	1931	1975	1918

In addition to the highway maintenance work performed by State forces, considerable maintenance work is done by contract each year:

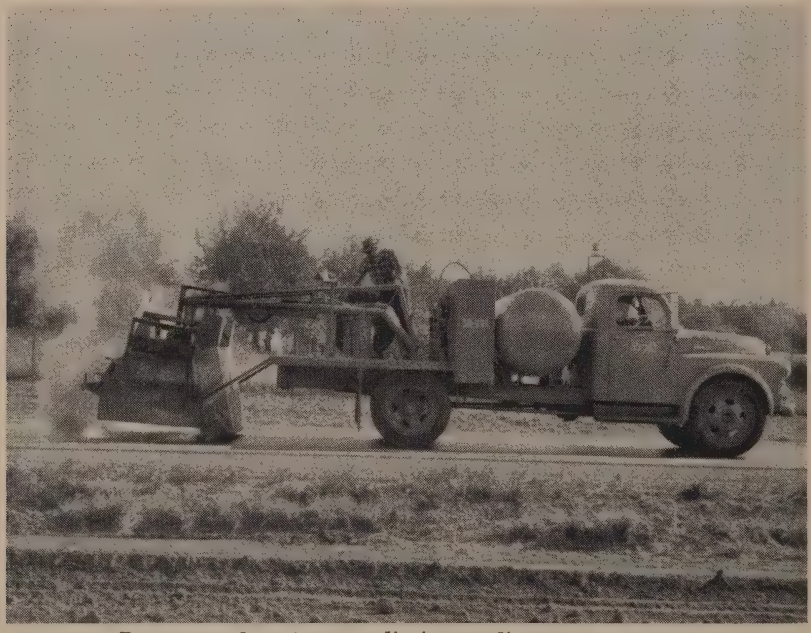
	1955	1956	1957
Reoiling of highways	$ 57,324	$ 361,790	$ 292,788
Miscellaneous bridge repair	48,301	106,247	93,134
Repainting major bridges	86,130	88,545	37,001
Crushed rock production	986,072	921,412	993,483
Miscellaneous	18,593	62,725	1,166
Total	$1,196,420	$1,540,719	$1,417,572

Asphalt, gasoline, kerosene, oil, tires, and other materials and supplies are purchased by annual contracts awarded by the Department of Finance on competitive bids. Cars, trucks, and other road maintenance equipment as specified is purchased for us by the Department of Finance on competitive bids. Field and emergency purchases of materials or supplies are all made in compliance with Department of Finance regulations and requirements of the Oregon Statutes.

Surface Maintenance

As long ago as 1923 Oregon pioneered the plan of patching pavements with hot asphaltic mix produced by State force operated portable plants that move from setup to setup as needed. The plan has proven most effective and economical for repair of breaks, reenforcement of weak areas, and restoration of smooth riding quality.

Seven plants were sent out to cover the state in 1957, eight in 1958. In 1957 190,133 tons were laid, in 1958, 183,851. The



Pavement burning to eliminate slippery pavement. Burner designed and built in Highway Shops.

average cost per ton in 1957 was $8.93, in 1958, $8.69. In 1957 22,421 tons and in 1958 27,082 tons were purchased from commercial plants and laid by State paving crews. An additional 16,503 tons in 1957 and 15,043 tons in 1958 were purchased from commercial plants and laid by section crews. The average cost of hot mix at producer's plants was $4.89 in 1957, $5.03 in 1958.

Beginning in 1956 some pavement patching has been contracted each year. In 1956 we contracted 5,200 tons at an average cost of $8.82; in 1957 1,510 tons for $9.00; and in 1958 6,584 tons for $8.83. In these cases the State furnishes flagmen and an inspector. As more contractors, familiar with this type of work and equipment with the necessary equipment, become available we hope to contract more of this work.

Three State Force oil crews placed 1,550,600 gallons of asphalt as seal or reoil at a cost of 38.8¢ a gallon in 1957 and 1,758,600 gallons in 1958 at a cost of 38.0¢ a gallon.

We have had pavement burning and planing equipment for many years and have done some of this type of work each year. In 1958 additional pavement burners were constructed in the Salem Shop and an accelerated program of burning undertaken to non-skid slick sections of pavement throughout the State.

Bridge Maintenance

Bridge Maintenance on highway and State Park bridges is performed by twenty State Bridge Crews located at strategic locations throughout the state. The work of the Bridge Crews is supplemented by contract projects wherever possible. Maintenance of bridges is for the most part routine; consisting of replacement of decayed or worn parts, repair and repainting of normal damage, and maintenance of deck surfacing. A portion of this work can be anticipated far enough in advance for the preparation of specifications and the calling of bids for contracts. Most of the painting of steel bridges is contracted in this way. Replacement of worn-out or obsolete structures is also generally done by contract. All pile driving work, repairing of docks and ferry terminals is contracted as the state does not maintain suitable equipment for this type of work.

Construction underway between Pistol River and Brookings on new location for U.S. 101 in Curry County.

Approximately one-third of our bridge maintenance work is performed by contract.

Emergency maintenance involves the repair and replacement of structures damaged or destroyed by flood, storms, or collision by traffic. This type of maintenance requires immediate attention and at times requires the crews to work around the clock to restore normal traffic. Major floods, such as the flood in the Malheur River in the early Spring of 1957, result in damage to a number of structures in the area resulting in a full season's work for all the crews in that area. Damage caused by flash floods, slides, or collision between traffic and structure can often be repaired and traffic returned to normal in a matter of a few hours.

Throughout the state system are a number of timber truss bridges and timber trestles which are being replaced with concrete or steel construction as fast as they reach the end of their safe service life. In this manner bridge maintenance costs can be more or less stabilized in spite of the increase in the number of structures.

The expanded construction program during the past two years has added many new bridges to the state system; the largest of which is the new Inter-state bridge between Portland and Vancouver. Most of the new structures, however, are of the grade separation class and should be less expensive to maintain than bridges over drainage areas.

Drawbridges

The following six drawbridges on the state highway system are manned full-time, 24 hours a day, for immediate service to river traffic:

1. The Interstate Bridge on the Columbia River between Portland, Oregon, and Vancouver, Washington. This bridge is operated by Oregon, but half the cost of operation is paid by the state of Washington. Traffic is now using the new bridge as a two-way bridge until the work of raising and remodeling the old bridge is completed; at which time each bridge will serve one-way traffic across the river.

2. The Steel Bridge over the Willamette in Portland. The state leases the car deck of this bridge from the Railroad owners who operate the lift-span. The state employees serving only to control highway traffic.
3. Youngs Bay drawbridge at Astoria.
4. The Lewis and Clark drawbridge at Astoria.
5. The Umpqua drawbridge at Reedsport.
6. The South Slough drawbridge at Charleston.

There are seventeen other drawbridges that are opened on request. Ten of these structures have not been opened for many years.

Drainage Tunnels

At several locations in the state we have constructed drainage tunnels under slide areas to stabilize the area. During the biennium only one tunnel was constructed; this tunnel approximately 550 feet in length was constructed under the Sunset Highway, 4 miles east of Glenwood.

After the tunnels are in place for a sufficient time to determine whether any further extension is necessary and when the timbering needs replacing, perforated pipe is installed throughout the tunnels and the tunnels are then backfilled with gravel or pervious material. This reduces the maintenance costs and allows the tunnels to function as drainage structures without further cost. Several tunnels have been backfilled during the biennium and more are scheduled to be backfilled in the next year.

Astoria-Megler Ferry

The Astoria-Megler Ferry is the only ferry system now operated by the State Highway Department. This ferry has been operated by the state since June 1, 1946. The state owns the ferry vessels, docks, and operating facilities. The operation of the ferries is by contract; the contractor furnishing the crews, fuel, insurance, and services to the public—such as food, restrooms, and the restaurant at Megler on the Washington side. The state maintains the ferry boats, landings, docks, and channels and employes the ticket agents.

Three ferry vessels are now owned by the state. The service requires the operation of all three vessels during the summer months. During the winter months the traffic decreases sufficiently that only one vessel need be kept in service.

The ferries annually transport about 126,000 cars and trucks at a cost of about $323,000, for which we collect in fares approximately $223,000—resulting in a deficit of approximately $100,000 annually. The deficit during 1958 will exceed this figure by about $50,000 due to the necessity of dredging the channel and relocating the landing facilities on the Megler side to conform to the reconstruction of the north bank highway by the state of Washington. The state of Washington pays no part in the cost of operation of these ferries.

The three vessels now operating at Astoria are MV Tourist II, MV Tourist III, and MV M. R. Chessman. MV Tourist II was constructed in 1924 and is reaching the age where high maintenance costs are necessary to keep it up to the standards necessary to pass inspection by the U. S. Coast Guard and the American Bureau of Shipping. Indications are that MV Tourist II will soon need replacing by a new vessel. MV Tourist III was built in 1931 and will give good service for several years to come. Its operation is not entirely satisfactory in that the width and vertical clearance will not accommodate the larger transport trucks now in service on the highways. MV M. R. Chessman, built in 1948, is a steel-hulled vessel which meets all modern requirements for ferry service.

All three of the ferry vessels have been equipped with radar, ship-to-shore telephones, and electric fathometers, to conform with Coast Guard regulations.

Buildings

State Bridge Crews also maintain, repair, and make alterations on state-owned office, shop, and storage buildings throughout the state. These buildings, numbering over a thousand in all, provide for office and storage space for the Salem Headquarters, five divisions, twenty-two districts and bridge superintendents, and one hundred thirty-two section crews, five equipment repair shops and other units of the organization including 22 State Police offices. We also furnish office space for the Department of Motor Vehicles and the

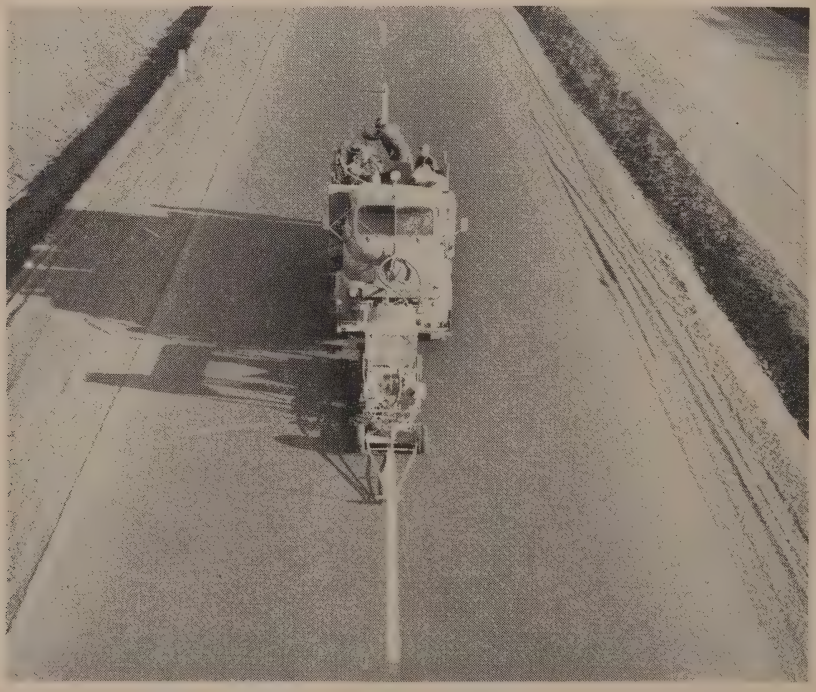
Public Utilities Commission in several locations throughout the state.

It is necessary for the state to furnish living quarters for its employees at many isolated maintenance stations. Seventy-five housing units at 26 stations and four trailer shelters are now being so furnished.

The state also maintains truck scales and scale houses at 60 locations for use by the Weighmasters and State Police.

Traffic Lines, Signals and Signs

The installation and maintenance of signals and signs and the painting of traffic lines are performed by State crews totalling 135 employees under the supervision of an Assistant Maintenance Engineer. In the sign shops at Salem the signs are made up, paint and other materials stored and posts and lumber seasoned. The electrical work on signals, signs, bridges,



State equipment used for painting center line.

buildings, tunnels, and other illumination is performed by eight electrical crews.

The traffic stripes on the highway are very important for traffic safety. In addition to the center, multiple lane and no passing stripes, an edge stripe has been added on some heavy travel routes where the outside lane is 14 ft. wide. Reflectorized sight posts are placed on new jobs and on many other heavy traffic sections for safety at night and in the fog.

Five striping crews operated in 1957 and 1958 and, in 1957, placed 11,545 miles of traffic line and used 90,000 gallons of traffic line paint. There are two types of traffic line laid, one being a non-reflectorized type used on oil macadam and secondary highways where traffic volume is low, and a beaded type where the paint is applied 50 per cent heavier and beads are dropped into the wet paint to reflect light and increase the visibility at night. The heavier paint and beads double the life of the line. The average cost of the plain line was $28 per mile, of the beaded line $40 per mile.

Minor Betterment

Minor Betterment work consists of miscellaneous small improvement supplemental to construction projects and minor additions to existing highway facilities. It includes those small additional improvements that are found necessary as time goes by but which were not at first anticipated.

The work often includes installation of additional culverts, ditches, drains, tunnels, catchbasins, guard fence, sight posts, traffic signals, illumination or channelizing facilities. In some cases sharp curves are widened, wooden culverts replaced with permanent type structures, footpaths are constructed, or sidewalks added to bridges.

A portion of this work that can be scheduled far enough ahead to permit preparation of plans and specifications is let by contract. A large number of the small projects, however, due to their limited size, urgent need, isolated location, or the requirement of specially trained crews or special equipment, are performed by State forces.

In 1957 a total of $720,973 was expended on Minor Better-

ment work, of which $550,865 was performed by State forces and $170,108 was contracted.

Equipment

The Maintenance Division furnishes and repairs all highway equipment. Rent is charged on each piece to cover depreciation, repair and maintenance. Repairs are made at five shops located at Salem, La Grande, Bend, Klamath Falls and Coquille. There is a superintendent in charge of each shop, all under the direction of the Equipment Superintendent at Salem. Supplies and parts are purchased, stored and dispensed from storerooms in connection with the shops.

Expenditures for new rental equipment such as cars, trucks, graders, transits, etc., in 1957 was $1,153,000 and in 1958 will run to approximately $1,357,000. Some of the increased expenditure was for additional transits, levels, and cars for survey crews on the accelerated construction program. Some additional funds have been made available so that equipment can be retired sooner. Increased efficiency of the crews, reduced lost time from breakdowns, higher resale credits, and reduction of repair costs more than offset increased procurement costs.

Sales from the storerooms were $1,639,500 and credits for repair jobs were $1,663,000 in 1957. All of this was charged out to the jobs on which the supplies or equipment were used.

Scrap metal, tires, and junk were sold quarterly on bids. Old and worn-out cars, trucks, and other equipment are sold at advertised oral auction sales through the Department of Finance.

A program of field inspection is carried on, and inspectors cover the State inspecting each piece of equipment on the job, paying particular attention to mirrors, windshields, swipes, brakes, lubrication and tires to assure that equipment is being properly serviced and maintained in good operating condition at all times.

Due to participation in the Interstate Highway program, the State has been eligible to purchase Government Surplus property and material through the U. S. Bureau of Public Roads. Several pieces of road maintenance equipment and

Reconstructed section of State Highway Route 86 near Richland in Baker County.

some material and supplies have been obtained at very reasonable cost.

Radio

The radio system has 38 base stations, 330 mobile units and about 275 mobile units for the State Police. The Police have five Speed Radar sets and the Highway Department three. Highway uses 32 pack sets on location surveys and in emergencies. The Police use 24 pack sets. Separate wave lengths for Highway and for Police have been installed at most points because of the increased traffic.

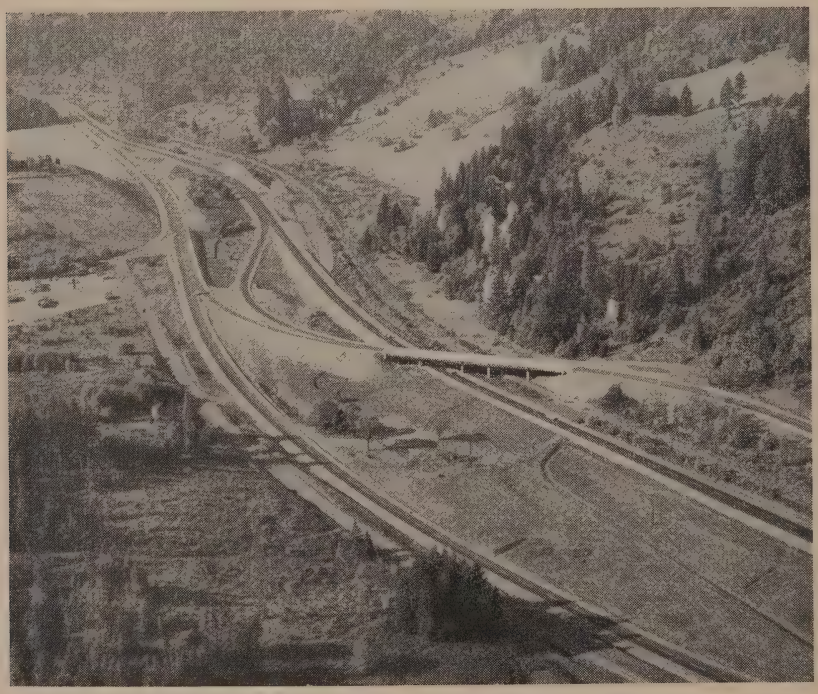
A teletype system covering Salem headquarters with seven instruments and all outside divisions and shops with ten, total 17, has been installed for quick and accurate communication. Telephone, radio and teletype are handy at all times and are essential in disasters like storms, floods, slides, fires and

wrecks, in the daily reporting of road conditions during the winter, and in keeping contact with drivers of cars, trucks and snow plows on the road.

Accident Prevention

A safety and accident prevention program is conducted to educate employees of the Highway Department in safe working practices. Safety meetings are held throughout the State at local headquarters for all employees in each area. All drivers have been given Porto-Clinic tests which determine depth perception, range of vision, and reaction time. Periodic check-ups are made of those employees with low scores and older employees whose eyesight tends to change rapidly.

A program of First Aid instruction for foremen, weigh-masters, and other employees who come in contact with the traveling public, was started in 1957 in cooperation with the



Divide Interchange on U.S. 99 south of Cottage Grove, Lane County.

Accident Prevention Division of the Industrial Accident Commission. To date 430 employees have received Standard First Aid cards; 70, Advanced cards, and 12, Instructor cards.

Safe Driver Awards are presented to equipment operators who have worked the entire year without a chargeable accident. For 1957 1009 awards were presented, with 185 of them 8-year awards. There are 132 section maintenance crews in the Department, and last year we presented 29 Awards of Merit to crews who had worked the entire year without having had a vehicle accident or a personal injury. Records covering all accidents, both vehicle and personal injury, are kept so that each employee's individual accident record is available. Each year summaries are made of all accidents. Our frequency rate, number of accidents per 100,000 miles operated, was 1.47 in 1951 when the safety program was started. In 1957 it was 0.99. Our vehicle accidents decreased from 272 in 1956 to 238 in 1957, a reduction of 12%. The first six months of 1958 compared to the first six months of 1957 shows a further decrease of 7%.

As a safety measure new applicants for employment in the Maintenance Division, with special emphasis on equipment operators, are required to take a performance driving test and a Porto-Clinic test. Each applicant is interviewed and his past driving record examined so as to employ only the best qualified men available in the hopes that our safety record will be improved through the years to come.

Cost Statements

Itemized statements showing the "per mile" cost of maintenance for both the primary and secondary systems during each of the calendar years of 1956 and 1957 and showing the number of miles of highway maintained, appear in accompanying tables.

TABLE XIV

Costs of Maintaining PRIMARY State Highways Calendar Year 1956

Kind of Work	General Maintenance	Contract Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 97,069.09	$	$ 97,069.09	247	$ 393
Asphalt pavement repairs	699,095.26	53,896.08	752,991.34	1,394	540
Bituminous macadam repairs	850,005.92	88,239.42	938,245.34	1,212	774
Oiled macadam repairs	1,653,577.63	121,403.74	1,774,981.37	1,902	933
Untreated macadam repairs	31,174.01	.....	31,174.01	39	799
Base and subbase repairs	6,271.78	.....	6,271.78	.....	.....
Graded or unsurfaced roadway	14,147.89	.....	14,147.89	36	393
Shoulders					
Blade, patch, re-treat	583,470.13	.....	583,470.13	.....	.....
Sidewalks, islands and curbs	17,325.86	.....	17,325.86	.....	.....
Drainage					
Ditches	405,526.95	.....	405,526.95	.....	.....
Drainage tunnels	47,704.52	.....	47,704.52	.....	.....
Pipe culverts, siphons, flumes	125,467.72	.....	125,467.72	.....	.....
Structures					
Box culverts-bridges 20′ and less	48,808.66	.....	48,808.66	.....	.....
Bridges over 20′ in length	313,314.89	151,846.85	465,161.74	.....	.....
Guard fences and sight posts	128,421.63	.....	128,421.63	.....	.....
Roadway tunnels	4,346.95	.....	4,346.95	.....	.....
Retain walls, bulkheads, dikes	17,908.86	345.13	18,253.99	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	497,951.97	.....	497,951.97	.....	.....
Noxious weed control	67,267.21	.....	67,267.21	.....	.....
Roadside development and erosion control	78,089.87	.....	78,089.87	.....	.....
Slides, roadbed and slopes	917,860.25	62,379.99	980,240.24	.....	.....
R/W fence, markers, mile posts	6,453.46	.....	6,453.46	.....	.....
Road approaches	12,642.21	.....	12,642.21	.....	.....
Traffic Service					
Traffic signals	56,417.96	.....	56,417.96	.....	.....
Signs and highway markers	293,799.83	.....	293,799.83	.....	.....
Traffic lines	290,128.24	.....	290,128.24	.....	.....
Snow removal	797,267.47	.....	797,267.47	.....	.....
Sanding slippery pavements	677,691.45	.....	677,691.45	.....	.....
Flag, tow etc. a/c high water	41,998.89	.....	41,998.89	.....	.....
Highway illumination	94,466.36	.....	94,466.36	.....	.....
Operation of highway magnet	5,729.22	.....	5,729.22	.....	.....
Operation of road sweepeer	72.43	.....	72.43	.....	.....
Subtotal	$8,881,474.57	$ 478,111.21	$9,359,585.78	4,830	$1,938
Maintenance supervision	289,539.88	.....	289,539.88		
Total primary maint.	$9,171,014.45	$ 478,111.21	$9,649,125.66		

TABLE XV

Costs of Maintaining SECONDARY State Highways Calendar Year 1956

Kind of Work	General Maintenance	Contract Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 20,068.97	$	$ 20,068.97	60	$ 345
Asphalt pavement repairs	115,024.15	16,384.11	131,408.26	500	263
Bituminous macadam repairs	24,285.42	.....	24,285.42	85	286
Oiled macadam repairs	731,248.03	81,866.27	813,114.30	1,448	562
Untreated macadam repairs	186,048.78	.....	186,048.78	420	443
Base and subbase repairs	4,640.32	.....	4,640.32	.....	.....
Graded or unsurfaced roadway	42,728.93	.....	42,728.93	131	326
Shoulders					
Blade, patch, re-treat	150,315.14	.....	150,315.14	.....	.....
Sidewalks, islands and curbs	2,261.59	.....	2,261.59	.....	.....
Drainage					
Ditches	152,252.57	.....	152,252.57	.....	.....
Drainage tunnels	4,233.04	.....	4,233.04	.....	.....
Pipe culverts, siphons, flumes	54,162.15	.....	54,162.15	.....	.....
Structures					
Box culverts, bridges 20' and less	12,342.01	.....	12,342.01	.....	.....
Bridges over 20' in length	238,900.08	42,945.81	281,845.89	.....	.....
Guard fences and sight posts	22,954.51	.....	22,954.51	.....	.....
Roadway tunnels	.....	.....	.....	.....	.....
Retaining walls, bulkheads, dikes	2,200.20	.....	2,200.20	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	149,075.55	.....	149,075.55	.....	.....
Noxious weed control	23,624.34	.....	23,624.34	.....	.....
Roadside development and erosion control	805.43	.....	805.43	.....	.....
Slides, roadbed and slopes	269,204.85	.....	269,204.85	.....	.....
R/W fence, markers, mile posts	903.98	.....	903.98	.....	.....
Road approaches	2,737.58	.....	2,737.58	.....	.....
Traffic Service					
Traffic signals	4,428.85	.....	4,428.85	.....	.....
Signs and highway markers	80,037.30	.....	80,037.30	.....	.....
Traffic lines	61,637.04	.....	61,637.04	.....	.....
Snow removal	283,302.79	.....	283,302.79	.....	.....
Sanding slippery pavements	81,985.18	.....	81,985.18	.....	.....
Flag, tow etc., a/c high water	15,210.43	.....	15,210.43	.....	.....
Highway illumination	2,332.60	.....	2,332.60	.....	.....
Operation of highway magnet	1,927.78	.....	1,927.78	.....	.....
Operation of road sweeper	.....	.....	.....	.....	.....
Subtotal	$2,740,879.59	$ 141,196.19	$2,882,075.78	2,644	$1,090
Maintenance supervision	89,353.84	.....	89,353.84		
Total secondary maint.	$2,830,233.43	$ 141,196.19	$2,971,429.62		

TABLE XVI

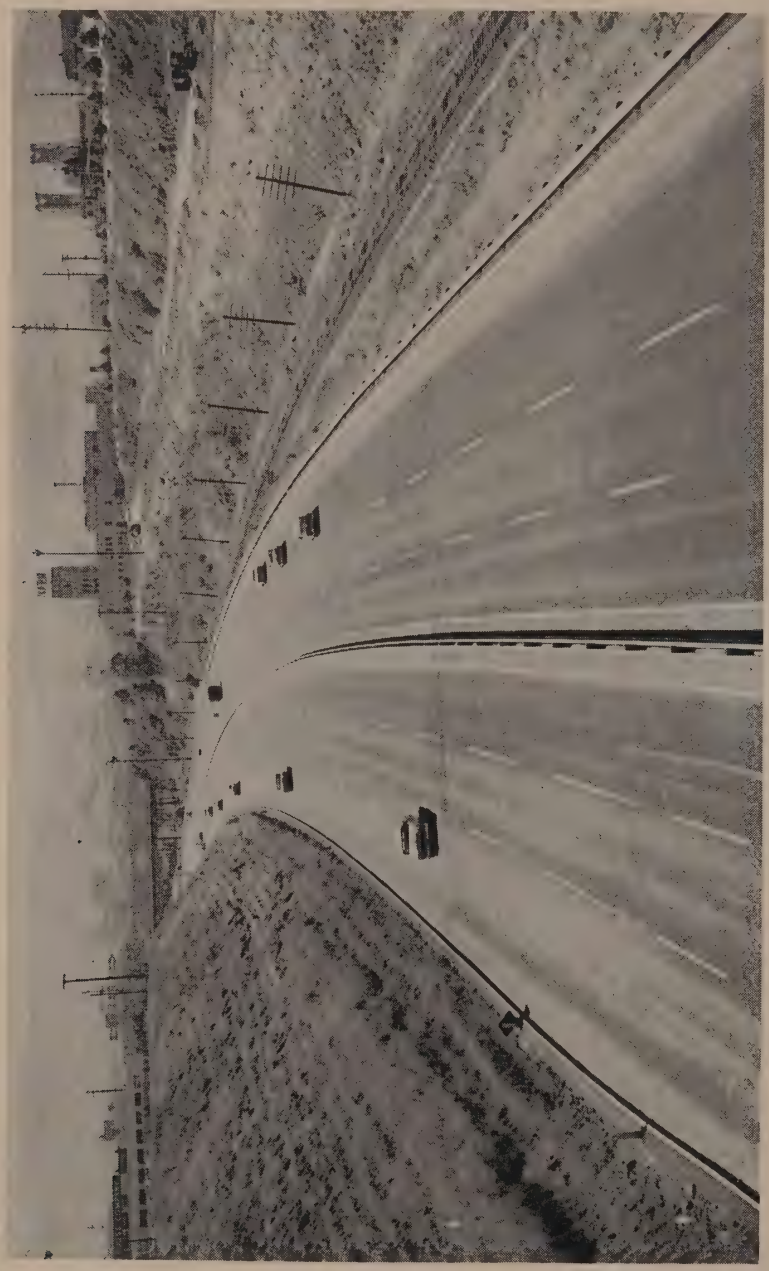
Cost of Maintaining PRIMARY State Highways
Calendar Year 1957

Kind of Work	General Maintenance	Contract Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 95,495.70	$	$ 95,495.70	253	$ 377
Asphalt pavement repairs	714,465.09	8,209.64	722,674.73	1,474	490
Bituminous macadam repairs	849,659.21	89,246.84	938,906.05	1,121	838
Oiled macadam repairs	1,653,562.59	92,105.12	1,745,667.71	1,893	922
Untreated macadam repairs	19,616.94		19,616.94	39	503
Base and subbase repairs	4,030.18		4,030.18		
Graded or unsurfaced roadway	24,350.27		24,350.27	36	676
Shoulders					
Blade, patch, re-treat	715,419.72		715,419.72		
Sidewalks, islands and curbs	23,975.32		23,975.32		
Drainage					
Ditches	411,911.58		411,911.58		
Drainage tunnels	35,929.74		35,929.74		
Pipe culverts, siphons, flumes	146,399.89		146,399.89		
Structures					
Box culverts, bridges 20' and less	45,587.37	1,165.73	46,753.10		
Bridges over 20' in length	372,769.08	42,211.69	414,980.77		
Guard fences, sight posts	133,388.26		133,388.26		
Roadway tunnels	1,789.34		1,789.34		
Retaining walls, bulkheads, dikes	35,945.57		35,945.57		
Roadbed and Right of Way					
Remove weeds, brush and debris	657,955.60		657,955.60		
Noxious weed control	84,630.21		84,630.21		
Roadside development and erosion control	92,535.10		92,535.10		
Slides, roadbed and slopes	579,495.18		579,495.18		
R/W fence, markers, mile posts	10,087.33		10,087.33		
Road approaches	16,258.49		16,258.49		
Traffic Service					
Traffic signals	57,710.98		57,710.98		
Signs and highway markers	272,064.60		272,064.60		
Traffic lines	333,238.65		333,238.65		
Snow removal	554,829.25		554,829.25		
Sanding slippery pavements	763,475.77		763,475.77		
Flag, tow, etc., a/c high water	27,513.20		27,513.20		
Highway illumination	117,942.00		117,942.00		
Operation of highway magnet	4,645.29		4,645.29		
Operation of road sweeper	167.71		167.71		
Subtotal	$8,856,845.21	$ 232,939.02	$9,089,784.23	4,816	$1,887
Maintenance supervision	303,932.94		303,932.94		
Maintenance adjustment	25,784.57		25,784.57		
Total primary maint.	$9,186,562.72	$ 232,939.02	$9,419,501.74		

TABLE XVII

Cost of Maintaining SECONDARY State Highways
Calendar Year 1957

Kind of Work	General Maintenance	Contract Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 25,420.72	$	$ 25,420.72	64	$ 397
Asphalt pavement repairs	160,154.65	2,282.92	162,437.57	533	305
Bituminous macadam repairs	46,699.24	36,078.78	82,778.02	79	1,048
Oiled macadam repairs	932,182.99	64,865.28	997,048.27	1,444	690
Untreated macadam repairs	197,663.85	.....	197,663.85	403	490
Base and subbase repairs	9,956.88	.....	9,956.88	.....	.....
Graded or unsurfaced roadway	55,244.38	.....	55,244.38	125	442
Shoulders					
Blade, patch, retreat	149,050.99	.....	149,050.99	.....	.....
Sidewalks, islands and curbs	1,698.68	.....	1,698.68	.....	.....
Drainage					
Ditches	183,699.84	.....	183,699.84	.....	.....
Drainage tunnels	2,873.91	.....	2,873.91	.....	.....
Pipe culverts, siphons, flumes	55,580.50	.....	55,580.50	.....	.....
Structures					
Box culverts, bridges 20′ and less	17,894.88	.....	17,894.88	.....	.....
Bridges over 20′ in length	254,221.77	87,923.85	342,145.62	.....	.....
Guard fences, sight posts	35,814.27	.....	35,814.27	.....	.....
Roadway tunnels	.....	.....	.....	.....	.....
Retaining walls, bulkheads, dikes	3,477.11	.....	3,477.11	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	184,339.91	.....	184,339.91	.....	.....
Noxious weed control	32,904.96	.....	32,904.96	.....	.....
Roadside development and erosion control	628.12	.....	628.12	.....	.....
Slides, roadbed and slopes	115,351.52	.....	115,351.52	.....	.....
R/W fence, markers, mile posts	658.00	.....	658.00	.....	.....
Road approaches	4,274.38	.....	4,274.38	.....	.....
Traffic Service					
Traffic signals	4,978.77	.....	4,978.77	.....	.....
Signs and highway markers	81,524.87	.....	81,524.87	.....	.....
Traffic lines	78,152.38	.....	78,152.38	.....	.....
Snow removal	218,694.83	.....	218,694.83	.....	.....
Sanding slippery pavements	102,029.04	.....	102,029.04	.....	.....
Flag, tow, etc. a/c high water	10,234.96	.....	10,234.96	.....	.....
Highway illumination	2,707.00	.....	2,707.00	.....	.....
Operation of road sweeper	21.14	.....	21.14	.....	.....
Operation of highway magnet	1,927.99	.....	1,927.99	.....	.....
Subtotal	$2,970,062.53	$ 191,150.83	$3,161,213.36	2.648	$1,194
Maintenance supervision	101,906.21	.....	101,906.21		
General maint. adjustment	8,645.36	.....	8,645.36		
Total secondary maint.	$3,080,614.10	$ 191,150.83	$3,271,764.93		



Union Ave. to 37th Ave., 6-lane Freeway Section of U.S. 30, in Portland.

REPORT OF TRAFFIC ENGINEERING DIVISION

F. B. CRANDALL, *Traffic Engineer*

The Traffic Engineering Division concerns itself with the operational aspects of the Highway System, both in regard to planned future development and existing facilities. This Division, in common with others of the Highway Department, has felt the impact of the Interstate Highway Program with a resultant increase in time and attention being given to the geometrics and operational features of the projected Interstate facilities. Projected plans for traffic interchanges are reviewed in considerable detail with particular regard to the operational features, always from the viewpoint of the vehicle operator moving through such interchange and his probable reaction to a particular intersectional interchange layout as may confront him.

Existing street and highway facilities of the State Highway System demand continuing attention with adjustments being made and new traffic control measures being applied as will offer traffic betterment, both from the standpoint of movement as well as safety.

Organizationally, the Traffic Engineering Division has continued to operate with two Sub-units; namely, Planning Survey and Traffic Control Sections. The details of operation during the past biennium can best be reported in terms of the operations of these two units.

Planning Survey Section

The principal activity from the standpoint of personnel and money expenditures is the state-wide Traffic Counting Program. During the biennium, vehicle miles have been obtained on city streets completing the four-year program of obtaining vehicle miles for all roads and streets in the state. Additional traffic volume information has been obtained on the State Highway System to indicate variances in the traffic pattern by reason of changes in highway routing by reconstruction of existing routes, construction of new routes and establishment of one-way grids in urban areas. The development of traffic count data is based upon 24-hour volume counts at selected locations and adjusting these 24-hour counts to repre-

sent an average daily traffic based on relationships found at the permanent automatic recorders. A more detailed description of this procedure has been outlined in a previous biennium report.

To provide detailed and continuous traffic information, 89 permanent traffic recorders are now in operation. During the past biennium, 54 permanent automatic recorders were installed and put into operation.

Traffic count data obtained on the State Highway System and the Federal-Aid Systems are compiled in a yearly bulletin for intra-departmental use as well as distribution to outside agencies interested in this particular information. The most recent publication is Oregon State Highway Department Technical Report No. 58-1. This report tabulates the 1957 Average Daily Traffic at selected locations on the State and Federal Systems. In addition to the technical report, a traffic flow map is prepared annually.

A knowledge of the origin-destination of traffic is essential in determining possible usage and economic justification of projected new facilities. During the past biennium, origin-destination studies using driver interview techniques have been conducted to determine interchange usage on the State Highway System for the following sections of the Pacific Highway: from the Willamette River to Salem, Albany to Eugene and Seven Oaks to the California State Line. An additional study has been conducted to determine usage of the Oregon Coast Highway from Astoria to Seaside. During this same period, comprehensive traffic studies were conducted and reports released for Pendleton (Technical Report No. 56-4) and The Dalles (Technical Report No. 57-3).

Road Inventory survey operations have been continued through the biennium. The primary purpose of this activity is to keep a complete, and insofar as possible, current record of all public ways in the State. In addition to establishing physical location and alignment of the road net, detailed information is obtained with respect to the roadbed section and roadside culture such as farm houses, residences, business establishments, commercial establishments, etc. These data, when transferred to map form, find extensive use not only

West Fork of the Illinois River Bridge Section near Cave Junction on U.S. 199 in Josephine County.

within the Highway Department but by other agencies as well. To date, field inventory has been completed in 30 counties in the State. The total mileage in the 30 counties that have been inventoried amounts to 43,700, or approximately 67 percent of the total mileage of public ways within the State. During the biennium, road inventory was completed in Douglas, Jackson, Klamath, Malheur, Morrow, Sherman, Union and Wasco Counties. The information as obtained from the road inventory is entered on Kardex files for permanent and ready reference.

One of the final products and uses made of the inventory data is the preparation of the General Highway and Transportation Maps of counties. During the biennium seven counties have been completed and the maps made available for distribution. These counties are as follows: Gilliam, Lane, Lincoln, Morrow, Sherman, Umatilla and Wasco. This makes a total

of 26 counties completed. The use of aerial photographs for inventory and mapping purposes has greatly increased the speed and accuracy of the inventory and mapping program.

During the past biennium, the distribution of the General Highway and Transportation Maps at the scale of ½″ = 1 mile and 1″ = 1 mile has included sales to the public as well as use by other state agencies. During this period some 30,000 sheets of county maps were distributed.

The mileage control work for the State Highway System includes the preparation of straight-line charts for all highways showing the surface type, number of lanes, structures, major access points, highway jurisdictions, important roadside culture and access control; with each item located by a distance reference from a fixed zero point. This reference is commonly referred to as the mile-point. During the biennium, revised straight-line charts have been issued for all of the Primary Highways and for the Secondary Highways for which major changes have occurred since the latest revision. A companion report has been prepared annually which gives detailed information for each highway for such items as pavement width and thickness, base thickness and width, etc. This report has been prepared for the State Primary System, the State Secondary System, the Federal-Aid Primary and the Federal-Aid Secondary System. The assembly of the data contained in the report utilizes IBM equipment, and thereby makes the data readily available for additional mileage reports and mileage compilations.

Economic studies provide an additional tool for selecting the best of several alternates and for programming projected highway improvements. Fifteen studies were made during the biennium.

During the biennium two studies have been completed to determine the relationship between motor vehicle accidents and the various geometric features of the roadway. A report on the roadway and accident data and their relationship to geometric features of the roadway was completed for urban and suburban extension of the State Highway System. Another study was completed which determined the relationship be-

tween the number of motor vehicle accidents and the width of paved shoulders.

The study to determine the structural adequacy of the highways has been continued during this biennium on the R. H. Baldock Freeway. Electronic scales have been installed on the Freeway north of the Woodburn Interchange. Axle weights of commercial vehicles have been obtained at the electronic scales for a limited period of time during each month of the biennium. Continued research at this location will be required before any results are available.

Over and above the major subphases of the Planning Survey operations as covered above, there is a multiplicity of continuing statistical compilations in the field of fuel consumption studies, out-of-state vehicle studies, truck weight studies, local finance studies, truck operating cost studies, vehicle placement studies and time studies. During the past biennium several additional studies in connection with the 1956 Federal-Aid Highway Act have been required by the Bureau of Public Roads for which the Planning Survey Section cooperated with other divisions of the Highway Department in supplying data necessary to complete the studies. In addition, there are other special studies of particular interest to the Bureau of Public Roads carried on at their request which are desired for use at the national level both in the field of research and legislation.

Traffic Control Section

The Traffic Control Section is responsible for investigation and preparation of recommendations on all matters pertaining to the safe and expenditious movement of traffic. In all investigations the factual tools of the traffic engineer—traffic volumes, speeds, accident records and physical conditions—are used in order that the final recommendation will be based upon fact rather than opinion.

Accident data form one of the basic sources for information bearing on the treatment of the traffic problem. The Division has continued to make both quantitative and qualitative analyses of motor vehicle accidents occuring on the roads and streets of the State. The quantitative analysis yields the mass of statistics relative to the type, frequency and severity of

Cottage Grove Jct. on U.S. 99 in Lane County showing Freeway and business route signs.

motor vehicle traffic accidents. The qualitative analysis points the way to proper corrective treatment and the results as reflected by previous treatment.

The Department of Motor Vehicles is the designated custodian of the original Motor Vehicle Accident Reports. However, the Highway Department is permitted to use the reports for the purpose of analyses. Information from the original accident reports is coded and transferred to IBM punch cards and processed on International Business Machine equipment with the punch cards being retained in the files of the Traffic Engineering Division. During the biennium 125,730 accidents were coded. During the previous two-year period, July 1, 1954 to June 30, 1956, 134,798 accidents were coded.

The use of the accident data is not confined to the Highway Department. Monthly, semi-annual and annual summaries, in

addition to frequent special studies, are compiled for the use of the Department of Motor Vehicles in driver education and driver improvemnt programs. The Oregon State Police is supplied with monthly accident information useful to them in their selective enforcement program. The City of Portland receives service similar to the Department of Motor Vehicles and the Oregon State Police, such being reimbursable on a cost basis. Cities and counties are also supplied with accident information upon request. The National Safety Council, a non-profit private organization whose efforts are directed towards traffic safety on a nation-wide basis, is the recipient of periodic accident data.

Technical Report No. 56-2 "1955 Traffic Accidents and Accident Rates" and Technical Report No. 57-2 "1956 Traffic Accidents and Accident Rates" were released for publication during the biennium.

The Traffic Control Section is responsible for investigations and reports incident to speed zones established by the State Speed Control Board on city streets and county roads and by the State Highway Commission on rural state highways. During the biennium, 70 investigations were conducted on 209 miles of roadway under State Highway Commission jurisdiction, with numerical speed zones being established on 117 miles of highway. A total of 191 investigations were conducted on 238 miles of roadways falling under the jurisdiction of the State Speed Control Board, with numerical speed zones being established on 192 miles—58 miles being on urban highway extensions, 75 miles on non-highway city streets and 69 miles on county roads.

The unit whose responsibility it is to conduct speed zone investigations is also responsible for investigation and recommendations for corrective treatment for problem intersections and highway sections brought to its attention by study of accident records, observation or complaints. Such studies concern traffic signs and markings, rural sidewalks, access control, intersection design, sight distance problems, parking problems and other related questions relative to the State Highway System. During the biennium a total of 400 such investigations were conducted.

Construction underway north of Bandon on relocated section of U.S. 101 in Coos County.

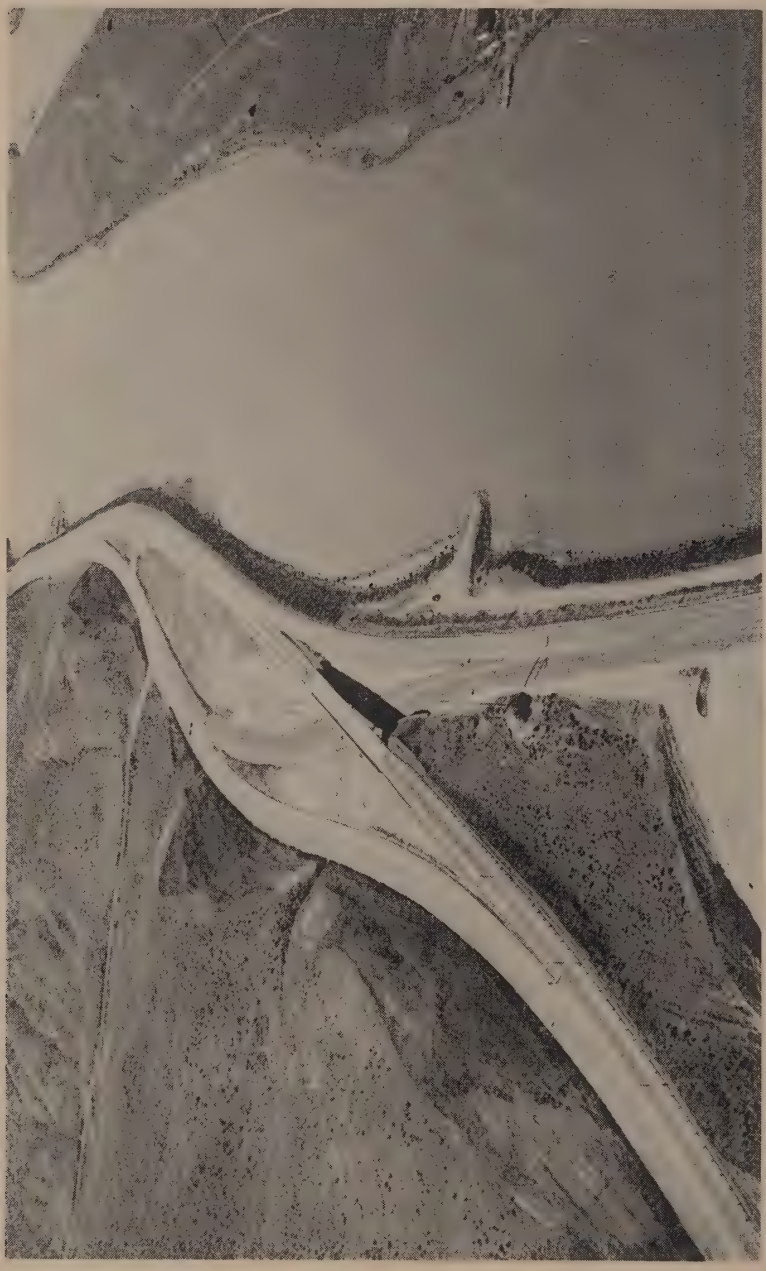
The Traffic Control Section is also concerned with the investigation, planning and design of traffic signals, illumination, signing and delineation projects on the State Highway System. This section also advises city and county agencies in their local traffic problems, on non-highway streets, where such advice is requested.

Warrants, as set forth by the American Association of State Highway Officials, are used in determining the need for traffic signals at all locations. These standard warrants must be met before traffic signal installations are approved. During the biennium, investigations as to the warrant for signalization were conducted at 80 intersections involving 18 cities and 10 rural locations. Flashing beacon investigations were also made at 35 intersections. Installation was approved for traffic signals at 54 intersections and for flashing beacons at 27 intersections.

With the accelerated highway construction program and the resultant increase in the number and complexity of the interchanges, a need for illumination has been created to provide nighttime visibility. Investigations were conducted which resulted in the installation of 345 luminaire units at 39 locations. Preliminary illumination studies have also been made at an additional 120 locations.

The Traffic Control Section is also directly responsible for the preparation of plans, estimates and specifications of all traffic signals, illumination, signing and delineation projects on the State Highway System. Plans and specifications were prepared for 16 contract traffic signal projects involving 49 intersections and for state force projects involving five intersections. Plans and specifications were also prepared for the flashing beacon and illumination projects mentioned previously. Maintenance and Bridge Division projects involving traffic signals, illumination, signing and delineation are also the responsibility of the Traffic Control Section.

The plans and specifications for delineation projects have only recently been developed and there is one contract project under way. Signing plans and specifications for the Interstate Highway System are still in the process of development. Research studies are being conducted to determine the most suitable materials to be used for the Interstate signs and the most economical method of erection.



Olds Ferry Interchange on the Snake River north of Ontario, U.S. 30 in Malheur County.

REPORT OF MATERIALS DIVISION

G. W. HARRA, *Engineer of Materials*

During the past biennium the Materials Division has tested more than 58,700 individual samples. If one subscribes to the old maxim that "one test is worth 100 opinions", the time saved in opinion making would appear to be considerable. However, the real value in testing is not a question of enumerating the kinds and numbers of samples tested, but of properly interpreting the results of tests in the light of the use to be made of the materials tested and the conditions under which they are to be used. The purpose of the Materials Division is twofold; one of service in providing information concerning all materials of construction, the other of control in making certain the materials are used properly. In accordance with this purpose, the Materials Division performs four functions:

1. To determine the quality of materials and assure that only those materials that meet the specified requirements are used.
2. To determine the proportions in which materials are to be combined for economy, strength, and service with due consideration for conditions that exist at the time of construction as well as conditions that will exist in years to come.
3. To assure that the materials are used in the proportions designed, and to assure that the final product has the specified qualities of strength and endurance.
4. To conduct research on new materials, methods of test and testing equipment, and causes of failure.

Quality of Materials

Considering the first of these functions, it is indisputable that quality may be determined only by test. In order to perform such test, the Division has been provided with a well-equipped laboratory at 2950 State Street, Salem. Because of the variety of types of material required to be tested, the laboratory is sub-divided into several sections. The head of each section is highly specialized through training and ex-

perience in the type of testing he directs. Thus reliability of tests is assured.

An engineer is in charge of the soils section under whom are four engineers employed full time, and several aides employed part time. Soil samples taken at various depths and at frequent spacings are tested for physical characteristics and bearing qualities. From the results of these tests the thickness of base rock and pavement required to withstand the probable heavy loads is calculated.

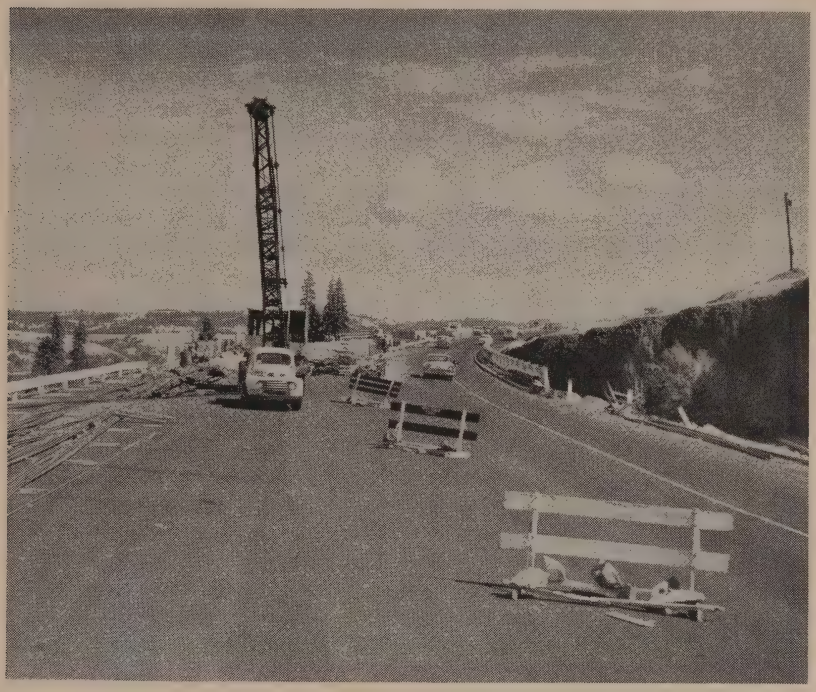
Two engineers are employed full time in the chemical section in which samples of paints and traffic line lacquers are analyzed for ingredient content and physical characteristics. Controlled service tests of lacquers are made and new formulations developed by this section. Also, samples of cement, creosote, treated timber, zinc coatings, ferrous and non-ferrous metals are chemically analyzed for conformance with specifications.

The oil and asphalt section employs two engineers full time and an aide part time. In this section, samples of asphalt, asphaltic mixtures, asphalt coated materials, and lubricating oils are analyzed to determine their physical characteristics and conformance with specifications.

The fourth section employs three full time engineers and two aides plus several engineering students during the construction season. Physical tests on fine and coarse aggregates, quarry rock, bituminous mixtures, Portland cement, reinforceing steel, and samples of concrete are made in this section.

Two engineers are employed full time designating the various tests that are to be made on each sample as it is received. The reporting of results of tests and the keeping of records are done under the direction of an office engineer.

Regardless of the reliability of tests in the laboratory, the results are of no value unless they are also valid. Since a test result is valid only insofar as the sample is valid, the Materials Division receives only samples taken by qualified personnel. For this purpose an inspection office is maintained in Portland and two qualified engineers and an aide are employed to sample materials originating in that area. These inspectors also observe shipments of materials represented by the samples



Shogren R. R. Overcrossing being widened to 4-lanes, U.S. 30 east of Mosier in Wasco County.

and observe fabrication processes for conformance with various specified requirements. In the field, where the Materials Division is responsible for the outcome of mix designs, such as asphaltic concrete and Portland cement concrete, division employees are assigned to take samples. For other sampling, the Materials Division has issued a pamphlet which explains in detail the approved methods of sampling the various materials encountered.

Proportioning of Ingredients

From the results of tests of the ingredients of Portland cement and asphaltic concrete, the mix or proportions of ingredients that are to be used in each specific project is designed. This mix is designed on the basis of materials available which have been sampled at frequent intervals during manufacture.

The Engineer of Materials and his assistant observe the actual construction and may change the mix to conform to changing aggregate characteristics or other construction conditions.

Inspection

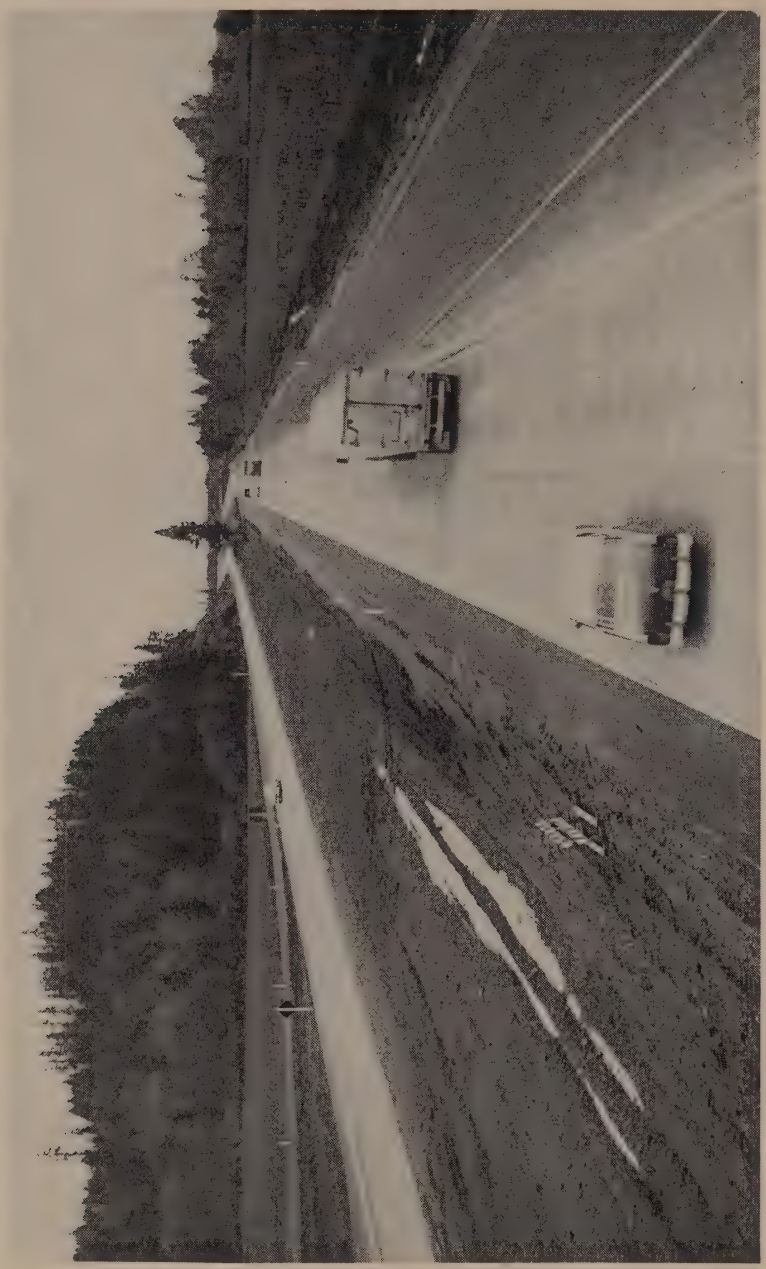
In order to assure that materials are used in the proportions designed, the Materials Division employs eight engineers full time as well as several part time aides and engineering students. These inspectors are stationed at the various batching and mixing plants. The duty of these men is one of control. They check the batch weights, periodically test the aggregate for granulometric analysis and take samples of the finished product to be sent to the laboratory for test. Deviation from specified strengths and composition in these samples calls for immediate remedial action. The inspectors are responsible for the consistency of the mixture in conformance with the design requirements. Considerable leeway is given the inspector to change the mix to conform to minor changes in the materials. Severe adverse conditions, however, are immediately reported to the Engineer of Materials who determines whether the mix should be changed to meet the conditions, or whether the conditions should be changed to meet the requirements. Mix design and inspection during the last biennium has applied to some 1½ million tons of asphaltic concrete representing several million dollars of value.

Research

For the purpose of developing test methods and equipment for measuring pertinent qualities of materials heretofore unmeasured, of determining the cause of failures and evolving methods of construction that will eliminate undesirable qualities and failures, and of testing and evaluating new materials, the Materials Division maintains a research section in which are employed three full time engineers assisted in the winter months by the field inspectors. Emphasis this last biennium has been placed on asphaltic concrete. The section operates a core drill, a concrete saw, and a deflection testing instrument. Deflection tests are made at various points on the current projects using the deflection instrument with the pave-

ment loaded to the legal limit. Small beams, four inches wide and two feet long, are cut with the concrete saw at the point of deflection measurement. The beams are brought to the laboratory and tested to failure on a laboratory-designed and built fatigue tester. Other physical tests are made on cores drilled at the point deflection tests are made. The results of all the tests are correlated to service behavior and all the data are studied with the object of determining the factors which improve pavement service.

Other projects in process the last biennium have been tests on proprietory products such as additive agents for Portland cement and asphalt designed to remedy certain inadequacies of the cements.



Portland cement pavement section of U.S. 99 north of Albany is near completion to Interstate standards.

REPORT OF LEGAL AND RIGHT OF WAY DIVISION

L. I. LINDAS, *Chief Counsel*

The 1957-1958 biennium saw the commencement of a comprehensive and sweeping Federal highway program to be participated in by the various states of the country.

The Legal and Right of Way Division, accountable for the handling of all legal work of the Highway Commission, has the further substantial responsibility of acquiring all of the real property necessary upon which to build the modern system of highways planned by the engineering department for the citizens of this State and the country at large. During the biennium between July 1, 1956, and June 30, 1958, the Legal and Right of Way Division acquired the following real property:

Number of Parcels	Use		Cost
2,095	Right of Way		$10,674,043.42
108	Material Sources		85,906.07
8	Stock Pile Sites		9,023.34
24	Park Purposes	$105,992.48	
	Credit for timber sold	50,197.90	
	Total		55,794.58
14	Miscellaneous, including Maintenance Sites, Radio Station Sites, Building Sites and Scale Sites		50,527.84
2,249	Total		$10,875,295.25

Because of the magnitude of highway construction since passage of the 1956 Federal-Aid Highway Act, together with legislative authorization for a $20,600,000 bond issue in 1957, the amount of litigation involving condemnation actions has shown a marked trend upward, which trend was expected. In addition to 321 condemnation actions instituted during the biennium, a number of other types of actions, such as contractual actions, tort actions and equity cases were instituted

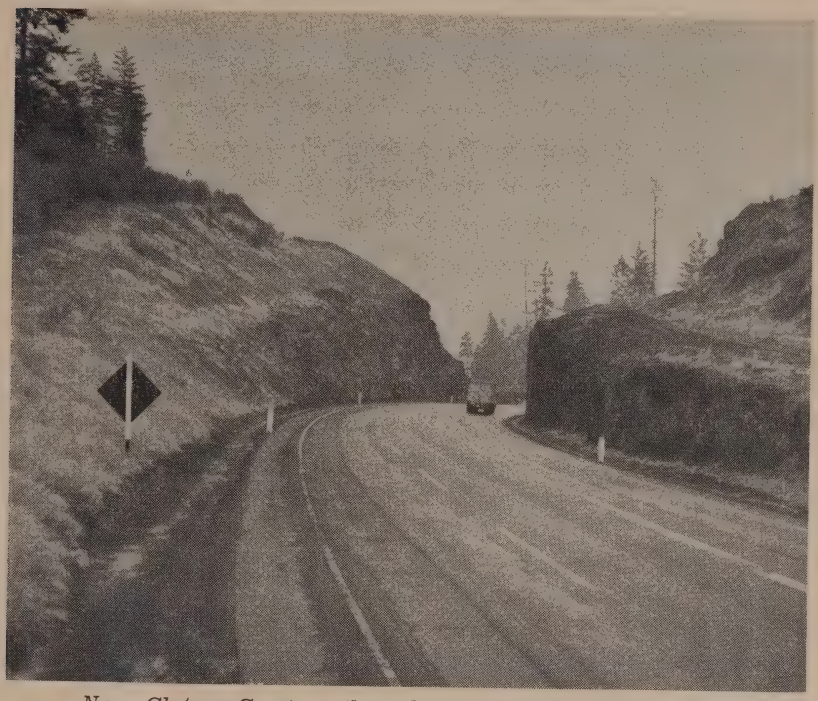
by or against the Highway Commission. The following chart will show a summary of these cases:

Court	Cases Pending July 1, 1956	Cases Commenced	Cases Tried	Cases Settled	Cases Pending June 30, 1958
District Court of the United States for the District of Oregon	1	1	0	1	1
State Supreme Court	8	7	8	3	4
Circuit Courts of the State of Oregon	230	456	166	243	277
District Courts of the State of Oregon	5	21	8	12	6
Justice Courts of the State of Oregon	0	6	3	2	1
Total	244	491	185	261	289

The enlargement and relocating of the network of highways throughout this State has resulted in the crossing or intersecting of numerous railroads and private roads. Since the Public Utilities Commissioner has jurisdiction over such matters and conducts hearings involving all such matters, it is incumbent upon the Legal Division to represent the Highway Department at these hearings. The Legal Department during the past biennium represented the Highway Commission as follows:

	Number
Hearings on highway-railroad grade separation projects	16
Hearings on highway-railroad grade crossing projects	24
Hearings on highway-railroad automatic signal projects	8
Hearings on highway-private road crossing projects	14
Miscellaneous matters such as railroad impaired clearances, general regulations, etc.	10
Applications examined and answers filed without attendance at hearings	49
Number of applications pending June 30, 1958	28

Court trials and public hearings comprise a large part of the duties of the legal staff; however, many other activities are performed, such as the writing of legal memoranda and opinions for the guidance of the officials of the Department, including preparation and review of numerous documents, instruments and records involved in the proper functioning of the Highway Department. Also included is preparation of



Near Clatsop Crest on the relocated Bradley Park-Wauna Section of U.S. 30 in Clatsop County.

necessary papers and documents necessary for issuance and sale of authorized revenue bonds for financing road and bridge building projects. The work of the Office Section of the Department's legal staff is summarized as follows:

	Number
Construction contracts examined and approved	462
Miscellaneous agreements examined and approved	31
Agreements of all types prepared (not including real estate options, deeds, and other standard form real property instruments)	368
Resolutions of all types prepared	499
Insurance policies and certificates examined	45
Bills for proposed legislation prepared	15
Written opinions prepared	62

One of the little-known activities of the Legal Division is the effort made to collect for damages caused by people who,

through negligence or otherwise, have damaged or destroyed property of the Department. The following summary will show our activity in this regard:

	Number	Amount Collected	Amount Due	Amount Uncollectible
Claims collected in full	406	$79,341.37	$	$
Compromise settlements	22	12,436.70		4,118.29
Installment payments	98	1,995.76	12,469.32	12,469.32
Claims abandoned	50			9,851.35
Claims pending July 1, 1958	121		22,781.10	
Totals	697	$93,773.83	$35,250.42	$26,438.96

Inevitably it becomes necessary in the acquisition of property for right of way and other authorized purposes to purchase remnants of property of a landowner, the bulk of whose property has been acquired, and personalty, when the same has the character of trade fixtures. It is the policy of the Highway Commission to dispose of such surplus as rapidly as it can, the best interests of the State being the primary consideration. The following chart shows the result of the Land Management Section's activities in this respect:

Rentals and leases of land and buildings	$239,250.84
Sale of buildings and equipment	314,039.48
Sale of land	305,302.53
Sale of timber	24,015.08
Interdepartmental sales, personal property	6,060.22
Total	$888,668.15

The foregoing briefly outlines the work of the Legal and Right of Way Division. In view of the Federal-Aid Highway Act of 1956, as amended, it appears that the Legal and Right of Way Division can expect increased activity for the duration of the said Highway Act—since the Federal-Aid Program will not be completed until 1969.

REPORT OF THE LANDSCAPE DIVISION

MARK H. ASTRUP, *Landscape Engineer*

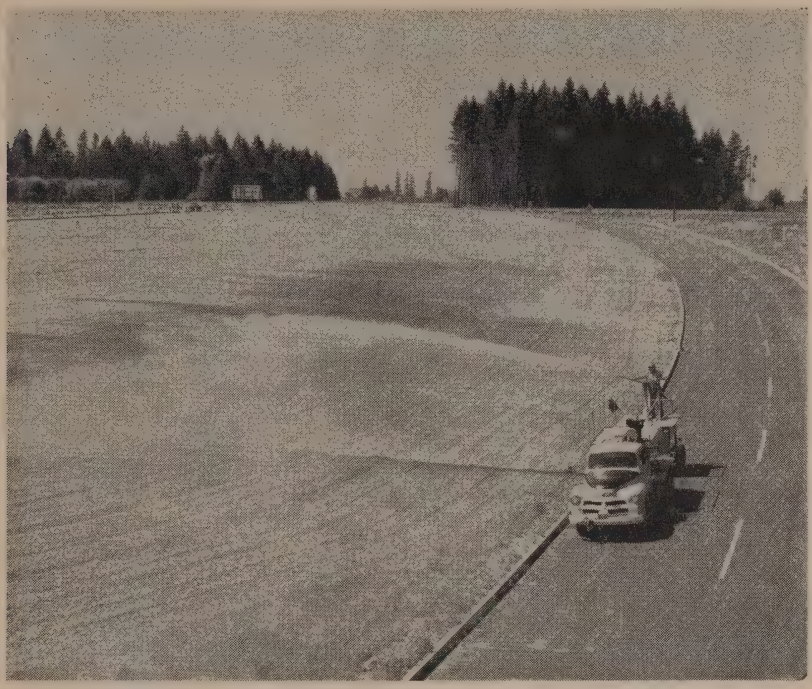
There has been no fundamental change in the character of the work or responsibilities of the Landscape Division during the 1957-58 biennium. The Division's work includes the establishment of vegetation to control erosion on cut and fill slopes and tree and shrub plantings for other functional purposes, the staff supervision of means to control undesirable vegetation inimicable to highway maintenance and operation or hazardous to the health of highway employees and users, and the establishment of roadside rest areas for the service to and the convenience and pleasure of highway users. To keep abreast of the accelerated construction program one additional landscape architect has been added to the technical staff.

Urban planting improvements have been completed in Klamath Falls, Portland, McMinnville and Springfield. Comprehensive plans for the location of and for the facilities to be constructed in the safety rest areas on the Interstate Highway system are in progress. Construction work is underway in four locations. These devlopments are eligible for the same Federal financial participation as road construction. The considerably higher standards planned will result in more serviceable units for public use at the lowest maintenance cost.

The program to eradicate noxious weeds and other undesirable vegetation has been pursued vigorously. Spraying conferences for maintenance personnel, organized in cooperation with the State Department of Agriculture and the Extension Service of Oregon State College, have proved a success in educating field employees in the how, where, why, when and what to spray. These meetings have also been extended to include county spray crews.

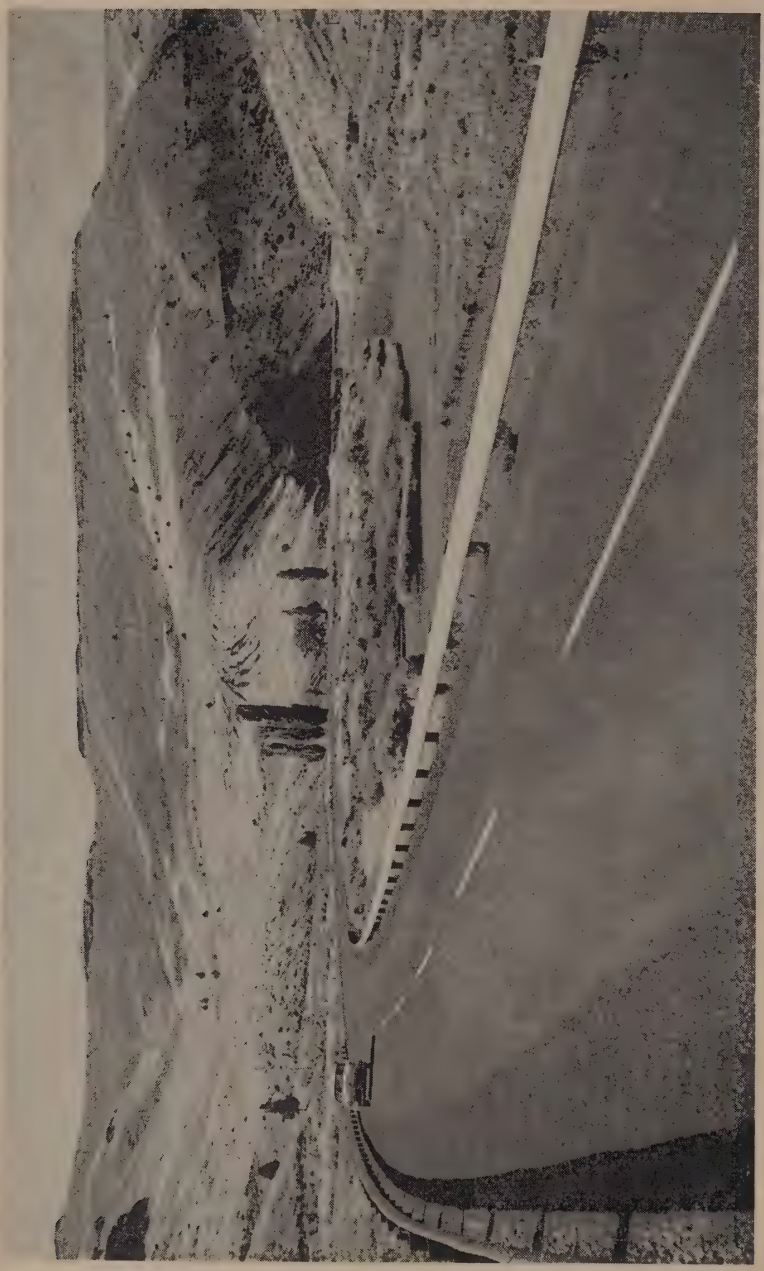
The program of erosion control has been able to keep pace with the construction program, thanks to the complete utilization of mechanized methods in seeding, mulching and refertilization. In what is believed to be a "first" in highway seeding and fertilization, a helicopter was employed in two

Seeding grass by helicopter for erosion control on slopes not accessible to our truck mounted equipment.



Seeding grass at Hayesville Interchange on U.S. 99 near Salem, Marion County.

locations not accessible to our truck equipment. Examination of the seeded areas reveals an even ground distribution of grass seed and liquid fertilizer. We anticipate that germination will disclose that seeding by helicopter is an entirely satisfactory method.



Section of 2.5 miles Horseshoe Bend-Gwynn Undercrossing reconstruction project on U.S. 20 in Malheur County.

REPORT OF COUNTY AND CITY RELATIONS DIVISION

C. G. SWENSON, *County and City Relations Engineer*

In general the County and City Relations Division functions as liaison between the State Highway Department, the 36 counties, and the 220 functioning incorporated cities within the state. In addition, the County and City Relations Division has been approved by the Federal Bureau of Public Roads to function as a "secondary road unit" as required in section 2 of the Federal-aid Road Act of 1950. This section of the 1950 act provides that each state shall establish an administrative and engineering unit functioning within the state highway department organization and charged primarily with the duty of establishing and maintaining cooperation between the state highway department and the counties in the selection of extensions to the Federal-aid secondary system, in the selection of projects and determination of the specifications for the improvement of projects, and in the supervision of the construction and maintenance of such projects.

Specifically, the duties and functions of the County and City Relations Division may be broken down as indicated in the paragraphs which follow.

Administration of the Federal-aid Secondary System

This system is presently comprised of some 3,455 miles of state highways and 3,910 miles of county roads. Only highways or roads designated as part of this system are eligible for projects partially financed from Federal-aid secondary funds as appropriated by Congress. The system is subject to revision as agreed upon by the state, counties, and federal government. Federal law and regulation require cooperation and agreement between the State Highway Department and the various county courts in all matters pertaining to system revision, selection of projects for construction, and determination of specifications for these projects. The County and City Relations Division maintains complete records of the approved system and carries on all negotiations with counties as required to work out state-county agreement on system revisions, on

the selection of projects, and on the determination of specifications.

County Federal-aid Secondary Program

Beginning with the Federal fiscal year of 1954, Federal regulation requires that 50 per cent of Federal-aid secondary funds be spent on the county road portion of the Federal-aid secondary system. An allocation of funds will be made to the individual counties based on the formula developed by the Association of Oregon Counties and approved by the State Highway Commission. This formula provides that 25 per cent of the funds available to the counties shall be divided equally among the counties and that the remaining 75 per cent of these funds shall be divided 80 per cent according to rural population and 20 per cent according to county road mileage as shown by the most recent records of the State Highway Department. Rural population of a county is to be determined by subtracting from the total population as shown by the latest Federal census, the populations of cities having populations greater than 5,000.

The county Federal-aid secondary program policy and procedure have not been changed and will continue in effect during the fiscal years 1960 and 1961. The State Highway Commission will pay 100 per cent of preliminary engineering costs and the counties will pay 100 per cent of the right-of-way and material sources costs. Both of these costs will be over and above the state and county participation in the Federal-aid construction projects. This will permit all available Federal funds to be applied towards construction costs with the state and county each paying 50 per cent of all costs in excess of Federal funds. This will result in participation in total construction costs on the basis of approximately 60 per cent Federal funds, 20 per cent state funds, and 20 per cent county funds.

In addition to regular FAS funds contracted during the biennium, $1,410,000 in anti-recession funds was allocated to counties for expenditure on county roads under the same policy and procedure as followed with regular FAS funds. The participation in the total construction cost of these anti-

recession projects is approximately 74 per cent Federal funds, 13 per cent state funds, and 13 per cent county funds.

Each county's allocations of anti-recession FAS funds and regular fiscal-year FAS funds are shown in accompanying Tables XVIII-A and XVIII-B.

A brief description of county Federal-aid secondary projects completed during the biennium is contained elsewhere in this report.

Supervision of Regular City Allocation of Highway Revenues

Under Oregon law each incorporated city must obtain approval by the State Highway Engineer of its plan of expenditure of its semi-annual allocation of highway revenues (known as the state tax street fund) if the city plans to accumulate said allocation of state tax street funds for more than two years after the date of receipt. The County and City Relations Division is charged with all direct negotiations with cities in the administration of this porton of the law and makes recommendatons to the State Highway Engineer according to its findings.

Orchard Avenue in Hermiston paved with special city street allotment funds.

TABLE XVIII-A

County Road Portion of Federal-aid Secondary Funds Fiscal Years 1959 and 1960

County	1959 Federal Funds	1960 Federal Funds	Total Funds Including State and County Match Money
Baker	$ 35,959	$ 38,047	$ 123,000
Benton	44,515	46,611	152,000
Clackamas	145,124	152,017	495,000
Clatsop	46,574	48,630	159,000
Columbia	56,597	59,318	193,000
Coos	68,528	71,690	233,000
Crook	35,537	37,485	122,000
Curry	27,066	28,272	92,000
Deschutes	46,371	49,244	159,000
Douglas	97,671	102,649	334,000
Gilliam	28,855	26,587	92,000
Grant	34,019	35,783	116,000
Harney	39,419	42,031	136,000
Hood River	37,546	39,188	128,000
Jackson	77,944	81,378	266,000
Jefferson	32,635	34,484	112,000
Josephine	48,093	50,455	164,000
Klamath	65,119	68,725	223,000
Lake	43,047	45,874	148,000
Lane	152,059	159,247	519,000
Lincoln	52,784	55,106	180,000
Linn	87,209	91,557	298,000
Malheur	74,131	78,517	255,000
Marion	123,085	128,921	420,000
Morrow	36,668	36,204	122,000
Multnomah	174,942	182,870	597,000
Polk	61,981	64,846	211,000
Sherman	24,906	25,674	84,000
Tillamook	47,536	49,683	162,000
Umatilla	92,879	82,747	293,000
Union	36,617	38,416	125,000
Wallowa	34,086	35,906	117,000
Wasco	36,179	37,714	123,000
Washington	113,939	119,321	389,000
Wheeler	25,261	26,552	86,000
Yamhill	65,119	68,251	222,000
Total	$2,250,000	$2,340,000	$7,650,000

SUMMARY ENTIRE STATE

	1959	1960	Total
Federal funds (50% of funds apportioned to Oregon for Federal-aid secondary projects)	$2,250,000	$2,340,000	$4,590,000
Required matching funds			
State funds	750,000	780,000	1,530,000
County funds	750,000	780,000	1,530,000
Total county road FAS fund	$3,750,000	$3,900,000	$7,650,000

NOTE: Federal funds are allocated to individual counties on the basis of the formula proposed by the Association of Oregon Counties and approved by the Highway Commission. Federal funds are estimated to represent approximately 60 per cent of the total, county FAS funds and state and county funds each approximately 20 per cent.

TABLE XVIII-B

County Road Portion of Federal-aid Secondary Funds Antirecession Program

Fiscal Year 1959

County	Federal Funds	Total Funds Including State and County Match Money
Baker	$ 16,761	$ 23,000
Benton	20,747	28,000
Clackamas	67,640	91,000
Clatsop	21,707	29,000
Columbia	26,380	35,000
Coos	31,939	43,000
Crook	16,564	22,000
Curry	12,615	17,000
Deschutes	21,613	29,000
Douglas	45,523	61,000
Gilliam	13,449	18,000
Grant	15,855	21,000
Harney	18,373	25,000
Hood River	17,499	24,000
Jackson	36,329	49,000
Jefferson	15,210	20,000
Josephine	22,416	30,000
Klamath	30,351	41,000
Lake	20,064	27,000
Lane	70,872	95,000
Lincoln	24,602	33,000
Linn	40,646	55,000
Malheur	34,552	46,000
Marion	57,368	77,000
Morrow	17,091	23,000
Multnomah	81,537	110,000
Polk	28,889	39,000
Sherman	11,608	16,000
Tillamook	22,156	30,000
Umatilla	43,289	58,000
Union	17,067	23,000
Wallowa	15,888	21,000
Wasco	16,863	23,000
Washington	53,105	71,000
Wheeler	11,774	16,000
Yamhill	30,351	41,000
Total	$1,048,693	$1,410,000

SUMMARY ENTIRE STATE

Federal funds (50% of funds apportioned to Oregon for Federal-aid secondary projects	$1,048,693
Required matching funds	
State funds	180,653
County funds	180,654
Total county road D-FAS fund	$1,410,000

NOTE: Federal funds are allocated to individual counties on the basis of the formula proposed by Association of Oregon Counties and approved by the Highway Commission. Federal funds are estimated to represent approximately 74% of Total County D-FAS Funds with State and County Funds each estimated to be approximately 13% each.

Special City Allotment Projects Approved for Construction from 1957 Fund Status July 31, 1958

City	Total	State	City
*Adams	$ 7,144.09	$ 7,144.09	$
**Beaverton	7,948.77	7,948.77	
Cove	18,921.31	18,921.31	
Dayton	12,503.84	12,503.84	
Eastside	9,946.29	9,946.29	
Echo	7,518.26	7,518.26	
Elgin	10,484.21	10,484.21	
Madras	24,029.01	20,000.00	4,029.01
Metolius	17,070.47	17,070.47	
Milton-Freewater	15,806.20	15,806.20	
North Powder	15,443.45	15,443.45	
Oakridge	18,450.72	18,450.72	
Philomath	15,924.47	15,924.47	
Prairie City	20,047.47	20,000.00	47.47
Prineville	25,594.23	20,000.00	5,594.23
Stanfield	17,581.54	17,581.54	
Tualatin	15,256.38	15,256.38	
Total	$259,670.71	$250,000.00	$ 9,670.71

* Adams carried as combination 1956-1957 funds project. See 1956 tabulation for $4,215.96 balance of $11,360.05 total cost.

** Beaverton carried as combination 1957-1958 funds project. See 1958 tabulation for $13,641.11 balance of $21,589.88 total cost.

Special $250,000 City Allotment Fund

By ORS 366.800 there is withheld from the regular state tax street fund $250,000 annually to be administered by the State Highway Commission and expended upon city streets not a part of the state highway system which are receiving excessive wear due to heavy and unusual industrial traffic or sudden increases in population in the area. Applications for street improvements from the various cities are investigated by this division, estimates of costs prepared, and a program report submitted annually to the Highway Engineer for presentation to the State Highway Commission. This program report contains a complete summary of all applications. After the Highway Commission has approved an annual program within the limits of the funds, the County and City Relations Division works out details for a written agreement covering each approved project and obtains execution of the agreement by the appropriate city officials. During this biennium 106 applications were received and investigated and 32 projects were approved by the Highway Commission for construction.

The amounts allocated to the various cities from the 1957

Special City Allotment Projects Approved for Construction from 1958 Fund Status July 31, 1958

City	Total	State	City
Athena	$ 23,487.88	$ 20,000.00	$ 3,487.88
*Beaverton	13,641.11	12,051.23	1,589.88
Carlton	11,888.38	9,888.38	2,000.00
Chiloquin	15,276.00	15,276.00	.....
Condon	17,475.38	17,475.38	.....
Coquille	17,165.20	17,165.20	.....
Gladstone	23,945.56	20,000.00	3,945.56
Haines	19,276.06	19,276.06	.....
Heppner	18,010.25	18,010.25	.....
Hermiston	28,703.50	20,000.00	8,703.50
Monmouth	15,807.76	15,807.76	.....
Ontario	31,513.25	20,000.00	11,513.25
Powers	19,470.13	19,470.13	.....
Sheridan	18,654.63	18,654.63	.....
Union	18,246.38	18,246.38	.....
Willamina	12,620.88	12,620.88	.....
Total	$305,182.35	$273,942.28	$ 31,240.07

* Beaverton carried as 1957-1958 funds project. See 1957 tabulation for $7,948.77 balance of $21,589.88 total cost.

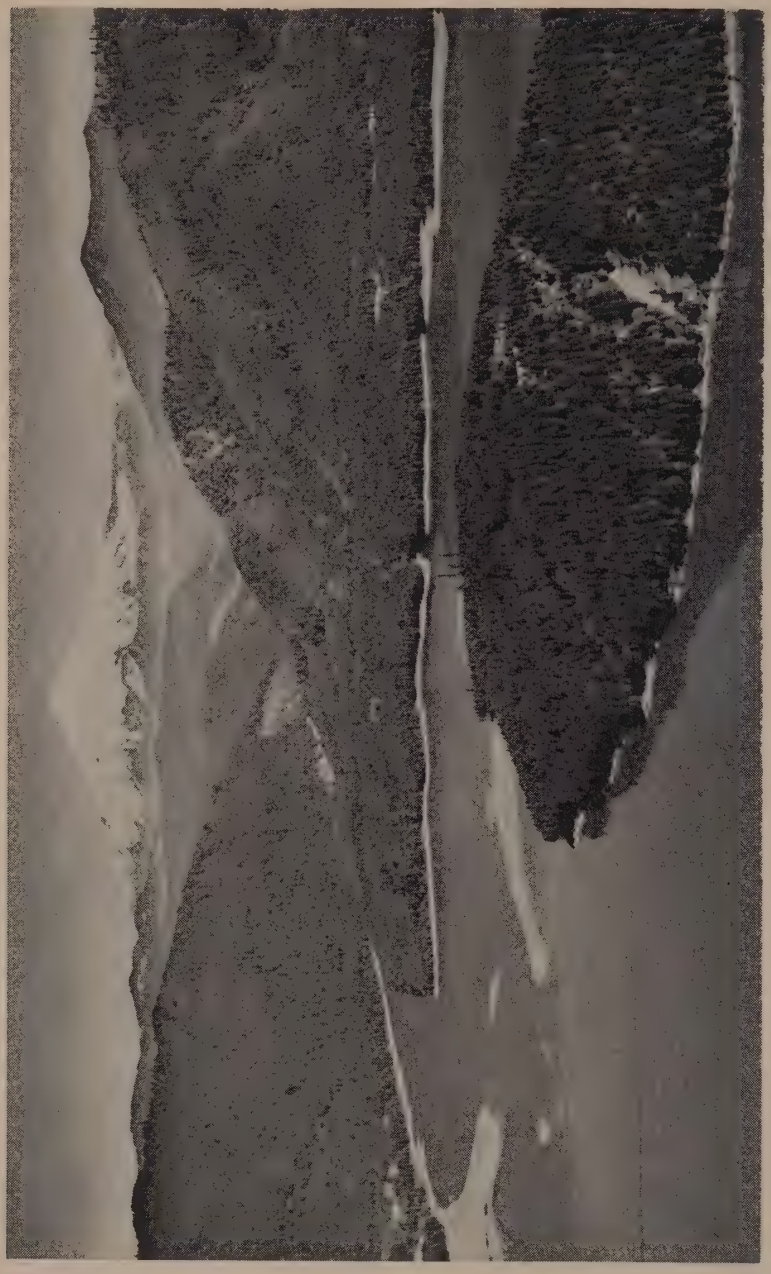
NOTE: When final costs of these projects are determined, all State costs in excess of $250,000 will be transferred to 1959 fund.

and 1958 special city allotment funds are given in accompanying Tables.

Miscellaneous Agreements and Resolutions

Another function of the County and City Relations Division is to furnish basic data to the Legal Division for use in the preparation of various agreements and resolutions for county or city execution as required by various State and Federal laws and regulations and to cover cooperative projects as agreed on from time to time by the Highway Commission and individual counties and cities. Also, execution by the appropriate county or city officials of each agreement and resolution prepared is obtained by this division. Projects up for contract award are carefully examined prior to each Highway Commission meeting and the required agreements or resolutions are determined at that time so that they may be prepared and executed before a contract is awarded.

In addition, the County and City Relations Division, when directed so to do by the State Highway Engineer, represents the Highway Department in numerous contracts with localized groups or organizations which have requested information.



From North Santiam Highway in Marion County, Mt. Jefferson and Detroit Dam Reservoir.

REPORT OF ACCOUNTING DIVISION

C. H. MAISON, *Auditor*

The Accounting Division is the administrative section responsible for the fiscal records of the State Highway Department. Every claim for expenditure from the Highway Fund is audited, approved, and recorded, prior to submission to the Secretary of State for issuance of warrant. All revenues are analyzed, segregated, and recorded. In addition to actual expenditures and receipts, many internal transfers are made by journal entry, crediting one expenditure account and charging another. A complete and detailed record is kept of all transactions, which makes possible the preparation of detailed reports on any phase of highway department costs.

Pursuant to authority granted by the 1957 Legislative Assembly, a bond issue of $20,600,000 was sold by the State Highway Commission on November 1, 1957. Funds realized from the sale has made possible a continuing increase in the volume of construction work, and this has in turn been reflected in a marked increase in the volume of work handled by the Accounting Division. The following schedule indicates the increase in the volume for the two year period from July 1, 1956, to June 30, 1958, over the previous biennial period ending June 30, 1956.

	Period ending June 30, 1956	Period ending June 30, 1958	Increase
Net receipts after deducting statutory contributions	$ 98,890,883.49	$147,214,292.57	$ 48,323,409.08
Expenditures	120,586,093.08	135,506,325.67	14,920,232.59
Number of claims for payment from Highway Fund	54,844	61,194	6,350
Number of journal vouchers for intra-departmental transactions	8,906	10,243	1,337

To most effectively handle the tremendous volume of detail, the Accounting Division is divided into six sections, so designed that the work load moves from one to another on a "production line" system. Each section is headed by a supervisor who coordinates the work with other sections, and who is responsible to the auditor.

Requisition Section

Requisitions for materials and supplies are received from all divisions of the highway department. From them, purchase requests are prepared and directed to the Purchasing Agent in the Department of Finance and Administration, who issues the purchase orders. Copies of the purchase orders are returned to the Requisition Section. Vendors' invoices are received in this section. Quantities billed are compared with the quantities reported by the individuals receiving the articles ordered, as indicated on the receiving record copy of the purchase order. Prices are checked, the mathematical accuracy of the invoices is proved, expenditure account numbers are entered, and the invoices approved and forwarded to the Claims Section.

Utility invoices are received via the field office having knowledge of the service billed. These are registered, audited for sequence of service and accuracy, approved and forwarded to the claims section.

Gasoline Section

This section handles all transactions pertaining to the purchase and use of petroleum motor fuels and lubricating oils and greases. Oil company invoices for direct purchases are verified as to quantity, contract price, and arithmetical accuracy, and passed on to the Claims Section for vouchering. All purchases are accumulated and charged to an inventory at the location for which they are purchased. All products used in highway equipment are substantiated by sales tickets showing the equipment in which they were used, the quantity and value, and the cost prefix of the job on which they are used. The inventory at each location is credited with these issues. Twice a month, each field office submits a physical inventory report of the gasoline on hand. This is reconciled with the perpetual inventory maintained by the Accounting Division in order that any discrepancies may be noted. Corrective action is taken where discrepancies are excessive.

The Gasoline Section also audits the oil company invoices for all state credit card purchases for highway equipment.

Charges against both the equipment and the job are noted and the invoice passed on to the Claims Section for vouchering.

Claims Section

All claims paid from the state highway fund are vouchered in this section. In addition to the invoices received from the requisition section, this section audits and vouchers the following claims: contractors' estimates; invoices from railroads and public utilities in connection with construction projects; invoices for passenger transportation; payment for purchases of rights-of-way and building sites; payment of pay roll deductions for state and federal taxes, industrial accident insurance, hospital association dues, etc.; and reimbursement for pay roll and other revolving fund disbursements. The vouchers are prepared in duplicate and sent to the ledgers section.

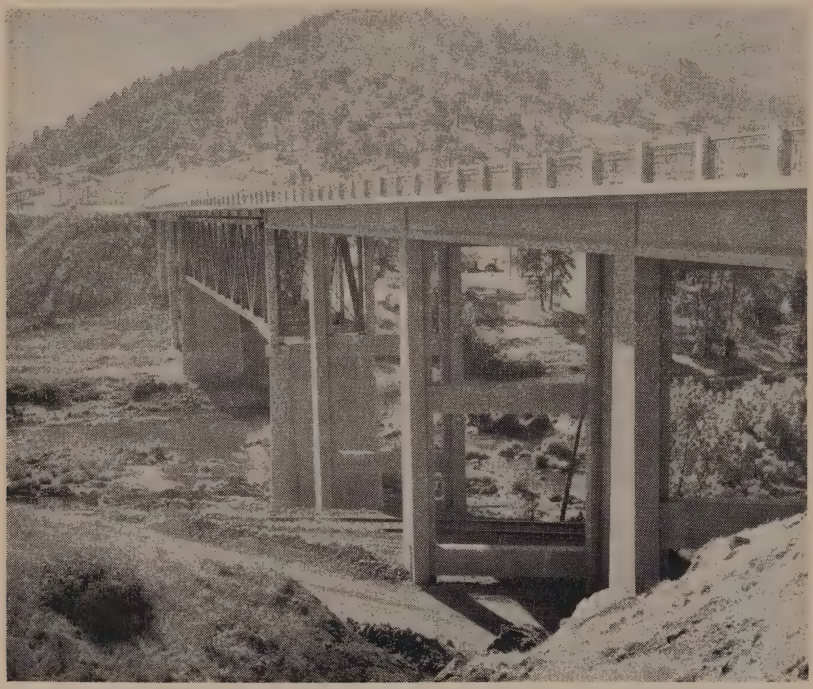
Ledger Section

The vouchered claims, in duplicate, from the Claims Section are numbered consecutively. After numbering, they are listed for approval for payment by the State Highway Commission, which has delegated this authority to the Commission Secretary. The original vouchers go to the Secretary of State with the approved list, where warrants are issued in payment of each claim. The warrants are returned to the ledgers section to be mailed to the claimant. The duplicates of the numbered vouchers are passed to the Cost Accounts Section.

The Ledgers Section keeps a general ledger in which all the financial transactions of the highway department are recorded. Transactions are first recorded in books of original entry, such as the voucher register, cash receipts record, warrant register, and journal, from which they are posted to the general ledger and various subsidiary ledgers. The subsidiary ledgers include accounts receivable; expenditures by project and object class; equipment costs; property investment; budget; gasoline inventory; and oil and grease inventory ledgers.

Cost Accounts Section

The duplicates of the numbered vouchers received from the Ledgers Section are first indexed, after which each ex-



Booth Ranch Bridge north of Myrtle Creek on U.S. 99.

penditure charge is coded to denote the nature of the charge. A consecutive record of all vouchers processed is kept showing the amount charged to each expenditure control. A detailed record of expenditures is kept showing charges and credits to every cost prefix.

Tabulating Section

This section, formerly a part of the Accounting Division, was merged with the Tabulating Section of the Traffic Engineering Division early in 1957, to create the Data Processing Division. This merger was for more effective use of equipment and personnel. It was also partially the result of expanding the use of punch-cards to include a wide variety of engineering operations.

In application, the accounting functions of the new division has been little changed. Detailed expenditures, from the

duplicate commercial vouchers received from the Cost Accounts Section, are listed and made a part of the voucher. Transfers of expenditures from journal vouchers are similarly listed and become a part of those documents. Details of the cost of maintaining and operating rental equipment are transferred to punch-cards, from which an annual report is prepared showing the cost for each piece of equipment.

Pay rolls are prepared from time reports which have been audited by the Pay Roll Section. A punch-card file is maintained for the pledged deductions of each employee, such as hospital insurance, savings bonds, group life insurance, and United Fund contributions. Deductions such as state and federal taxes, state retirement contributions, and federal social security contributions, which are based on the gross pay earned, are computed for each individual on each pay roll. The machines automatically determine the gross pay due, make the various deductions and print the net pay due. After the pay rolls are prepared, pay roll checks are written, using the same punch-cards. During the two year period, 83,273 pay roll checks were written representing gross earnings of $30,165,135.23. A detailed record is kept of the state and federal withholding taxes, social security tax, and retirement contributions deducted from the pay of each employee. All such information is recorded in punch-cards which are used for various quarterly and annual reports.

Pay Roll Section

All records pertaining to payment of highway employees are maintained by this section. A personnel action for every change in the status of an employee is received, numbered, recorded, and filed. A record is kept for each individual showing the amount of vacation and sick leave time earned and the amount taken.

Monthly time reports are received from each office and crew. They are audited to ensure that only authorized employees are listed; that approved pay rates are shown; and that sick or vacation leave time shown does not exceed earned credits. The time reports are then passed to the Costs Accounts

Section where control totals are established for each group, and next to the Data Processing Division for preparation of the pay rolls and pay checks. The pay rolls and checks are returned to the Costs Accounts Section where the totals are verified and the checks signed, and then back to the Pay Roll Section. Before the checks are mailed, each one is visually inspected for typographical errors. Two copies of the pay rolls are given to the Claims Section to be vouchered for revolving fund reimbursement, and another copy is returned to the office submitting the time report.

The Pay Roll Section writes revolving fund checks for miscellaneous expenditures. During the period, a total of 19,502 checks were issued for miscellaneous payments and 10,625 checks for per diem allowances.

General Comments

There are three major objectives in the Accounting Division; to process all claims as quickly as possible to avoid undue delay in payment; to accurately record every expenditure to the proper account; to work in close cooperation with all other divisions of the highway department and furnish such reports as may be necessary for proper administration and supervision.

Numerous reports are issued periodically among which are the following:

Financial Report: Prepared monthly for the State Highway Commissioners, Highway Engineer, and other officials.

Schedule of Authorizations and Expenditures on Contracts in Progress: Prepared monthly for the State Highway Commissioners, Highway Engineer and other officials.

Maintenance Budget and Expenditures: Prepared monthly for the maintenance engineer, division engineers and district maintenance superintendents.

Payment of Expenditures by Funds: Prepared monthly for the various officials, staff engineers and department heads.

Equipment Department Report: Prepared bi-annually de-

Relocated section of the Mt. Hood Highway between Laurel Hill and Government Camp is near completion. Construction by Bureau of Public Roads.

noting the status of the equipment department operations prepared for the maintenance engineer and equipment superintendent.

Equipment Operating and Maintenance Costs: Prepared annually showing the cost per mile for operating and maintaining various makes and types of rental equipment. This is prepared for the highway engineer, maintenance engineer, equipment superintendent and other interested individuals.

The current fund balance sheet of the Oregon State Highway Department as at June 30, 1958, is shown in accompanying Table XIX.

TABLE XIX

Current Fund Balance Sheet
As at June 30, 1958

ASSETS

Cash on deposit and on hand:			
Highway fund:			
On deposit with State Treasurer	$ 4,998,516.99		
Investments—par value	22,000,000.00		
Accrued interest purchased	9,700.61		
Unamortized premium and discount—net	10,838.31	$ 27,019,055.91	
Revolving fund		775,184.11	
U. S. National Bank—Astoria Branch		5,000.90	
Change fund and petty cash		910.00	
Bid deposits—contra		777.00	
Advance deposits account—contra		833,618.66	
Deposit with fiscal agency—contra		2,146,131.25	$ 30,780,677.83
Unreimbursed revolving fund expenditures			224,815.89
Receivables:			
Accounts receivable—miscellaneous		$ 67,878.14	
Rentals receivable		13,258.79	
Reimbursements receivable:			
Federal aid		1,802,620.00	
Cities and counties		291,133.47	
Total		$ 2,174,890.40	
Less reserve for losses		1,712.37	
		$ 2,173,178.03	
Revenues receivable		115,675.37	2,288,853.40
Inventories, unallocated field costs, etc:			
Inventories		$ 7,210,053.09	
Unallocated field costs, gas, oil and grease		278,357.05	
Postage on hand		1,696.78	7,490,106.92
Deferred expenditures:			
Unamortized bond discount and premium—net			743,602.03
Amount to be provided for retirement of general debt—contra			73,400,000.00
Cost to complete construction and rock production in progress—contra			38,830,026.58
			$153,758,082.65

TABLE XIX—Continued

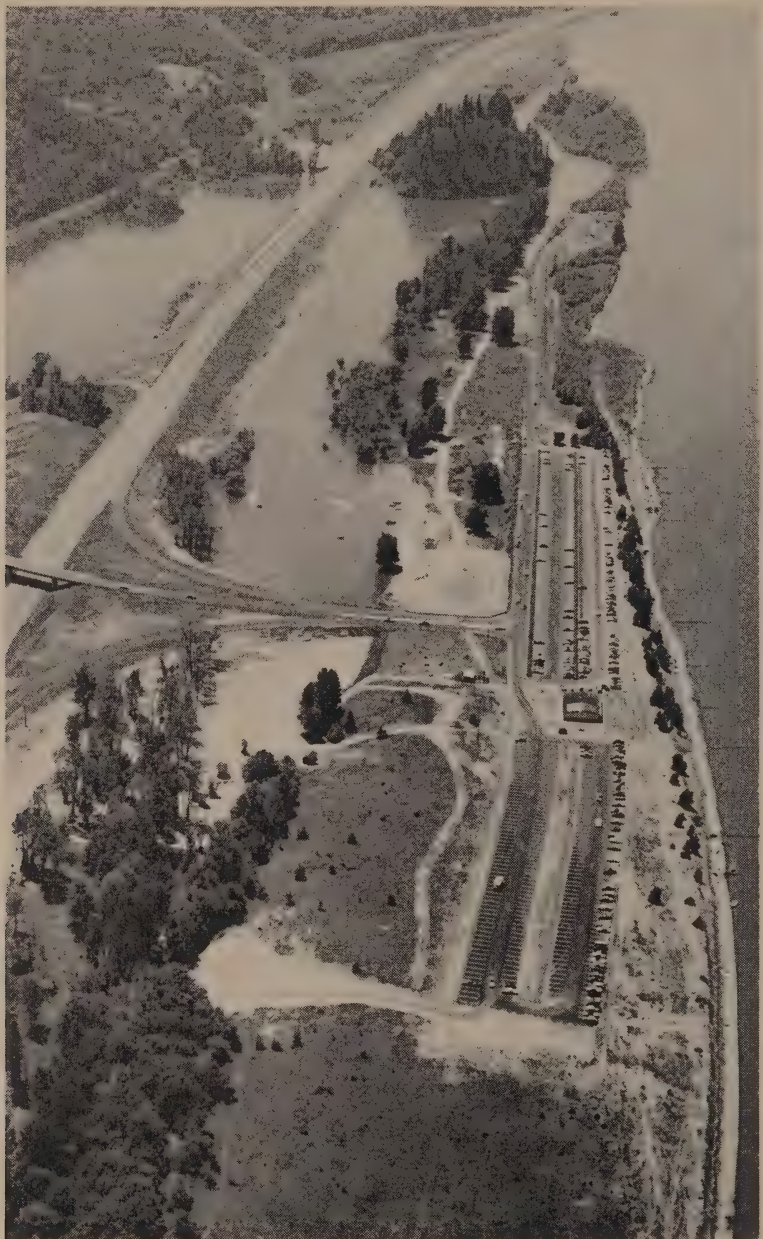
Current Fund Balance Sheet
As at June 30, 1958

LIABILITIES, RESERVES AND SURPLUS

Current liabilities:		
Vouchers payable	$ 558,431.93	
Contracts payable—retained amounts	1,854,808.45	
Employees' withholding tax and other deductions	224,991.81	
Matured bonds and interest coupons—contra	2,146,131.25	
Deposits on contract bids—contra	777.00	
Deposits on work to be performed—contra	833,618.66	
Contractors' claims payable	6,071.97	$ 5,624,831.07
Bonds payable		73,400,000.00
Reserve for city allotment projects		218,768.44
Deferred revenues		2,295,302.80
Cost to complete construction and rock production in progress—contra		38,830,026.58
Reserves and surplus:		
Reserve for revolving fund	$ 1,000,000.00	
Reserve for investment in inventories, etc.	7,490,106.92	
Reserve for amortization of bond discount and premium—net	743,602.03	
Current surplus	24,155,444.81	33,389,153.76
		$153,758,082.65

RECONCILIATION OF CURRENT SURPLUS

Current surplus as above	$ 24,155,444.81
Contracts payable—retained amounts	1,854,808.45
Liabilities accrued as of December 31, 1957, unrecorded	6,074.86
Reserve for city allotment projects	218,768.44
Unexpended balance, June 30, 1958—Exhibit C	$ 26,235,096.56



Rooster Rock State Park along Columbia River on U.S. 30, 23 miles east of Portland.

REPORT OF STATE PARKS DIVISION

C. H. ARMSTRONG, *State Parks Superintendent*

The spectacular rise in attendance at park areas continues to emphasize the need for the development of scenic and recreational attractions of Oregon's State Parks. The acquisition of new park areas and the enlargement of existing facilities during the biennium have provided convenient and functional park facilities where the greatest numbers of people will be benefited.

Six new parks throughout the State and 2,235 acres at 26 park areas have been added to the park system to help meet the rapidly growing demand for adequate facilities.

In southeastern Oregon, a 730-acre tract at Owyhee Lake in Malheur County was obtained through a 50-year use agreement with the U. S. Government Bureau of Reclamation. Located on a scenic 52-mile long lake, this area will provide fishing, boating, and picnicking in the spectacular rocky Owyhee Canyon.

Along the Oregon Coast, a 30-acre overnight camping site, of which 29 acres was donated by the City of Delake, and a 56-acre day use area were obtained on the shores of Devil's Lake in Lincoln County. Having beach access as well as lake frontage, the camping area will serve a real need for those who like to camp near the ocean. Boating, picnicking, and possibly swimming will be developed at the day use area. Between Newport and Waldport, an area of 47 acres was purchased at Ona Beach. This new park will provide day use of the fine beach located at the mouth of Beaver Creek. A small area at Hug Point, south of Cannon Beach, was given by Clatsop County for park purposes. This provides an excellent beach access point.

In Multnomah County near Dodson, 82 acres in the Columbia Gorge known as McLouglin Park was accepted as a gift from the City of Portland.

The Klamath Falls-Lakeview Forest Wayside, an 80-acre tract preserving a scenic stand of pine timber along State Highway 66 in Klamath County, was obtained from the U. S. Government.

Owyhee State Park located on the north end of Owyhee Reservoir in Malheur County.

An 83-acre addition to Samuel H. Boardman Wayside in Curry County forms the final connecting link in a 10-mile coastal strip of unusual scenic ocean front which will be opened to the public by reconstruction of the Oregon Coast Highway. Two parcels of land acquired at Sunset Bay include: 17 acres which will permit the development of overnight camping, and 22 acres which completes the ownership of the north shore of Sunset Bay.

Purchase of an additional 38 acres at Beverly Beach made possible further overnight camping enlargement. At Mayer Park on the Columbia River, 8 acres of newly acquired land was developed for day use and for a boating area site. Thirty-five acres of river frontage adjacent to Champoeg was donated by Marion County.

Other additions were made at Depoe Bay, Fogarty Creek, South Newport, Armitage, Howard J. Morton, Dabney, Guy W. Talbot, Crown Point, Benson, John B. Yeon, Cline Falls, Silver Falls, and the Thomas Condon-John Day Fossil Beds Parks.

Development of day use facilities included completion of major initial facilities at Rooster Rock and Fogarty Creek.

Parking areas, boat launching ramp, boat basin, picnic facilities, log boom swim area, and rest rooms were constructed at Rooster Rock on the Columbia River where 384,000 persons visited during the first year of operation in 1957. A 48′ x 68′ multiple use building and increased parking areas were added in 1958 to serve the popular beach area. The new building provides rest rooms, dressing rooms, showers, food and beach equipment concessions, and police headquarters. Beach use is also popular at Fogarty Creek where initial parking and picnic facilities were expanded to meet the needs.

Initial day use developments were made at Owyhee Lake and at Mayer Park. Accommodations for picnicking and boat launching have been provided at both areas. New picnic areas were developed at Jackson F. Kimball Park at the headwaters of the Wood River in Klamath County, at Lewis and Clark Park near Troutdale on the Sandy River, and at Howard J. Morton Park on the McKenzie River.

Approximately 60 per cent of overnight camping took place on the Oregon Coast, and, because camping facilities there received heavier use than in other sections of the state, much of the camping expansion was done in this region. A 32-unit camp was built at the recently acquired Devil's Lake area, and a new camp containing 74 units was completed at Sunset Bay. Other coastal camp expansions made were 138 units at Fort Stevens, 70 units at Cape Lookout, 83 units at Beverly Beach, 20 units at Beachside, 92 units at Honeyman, and eight units at Humbug Mountain.

Inland camp expansions included 56 units at Detroit Lake, 18 units at Cove Palisades, 36 units at Tumalo, and 20 units at Viento.

A new development in camping activity was inaugurated in the form of camping sites for organized groups larger than family size. Areas for handling this type of overnight camping were constructed at Fort Stevens, Cape Lookout, Tumalo, and Wallowa Lake.

Picnic areas and facilities were expanded extensively at Cape Lookout, Fort Stevens, Ochoco Lake, Hat Rock, and Detroit Lake where water-associated activities are popular. Many areas received improvements in parking areas, roads,

water systems, trails, guard fences, drainage systems, tables, small stove shelters, and other park facilities. A better boat launching ramp was constructed at Honeyman at Woahink Lake, and beaches were improved at Fort Stevens and Benson Parks.

Among new buildings erected during the biennium were park foreman residences at Fort Stevens and Hat Rock. A 40′ x 85′ recreation hall was built at the North Falls Youth Camp at Silver Falls. A combination food concession and dressing facility building was constructed at Fort Stevens near the lake.

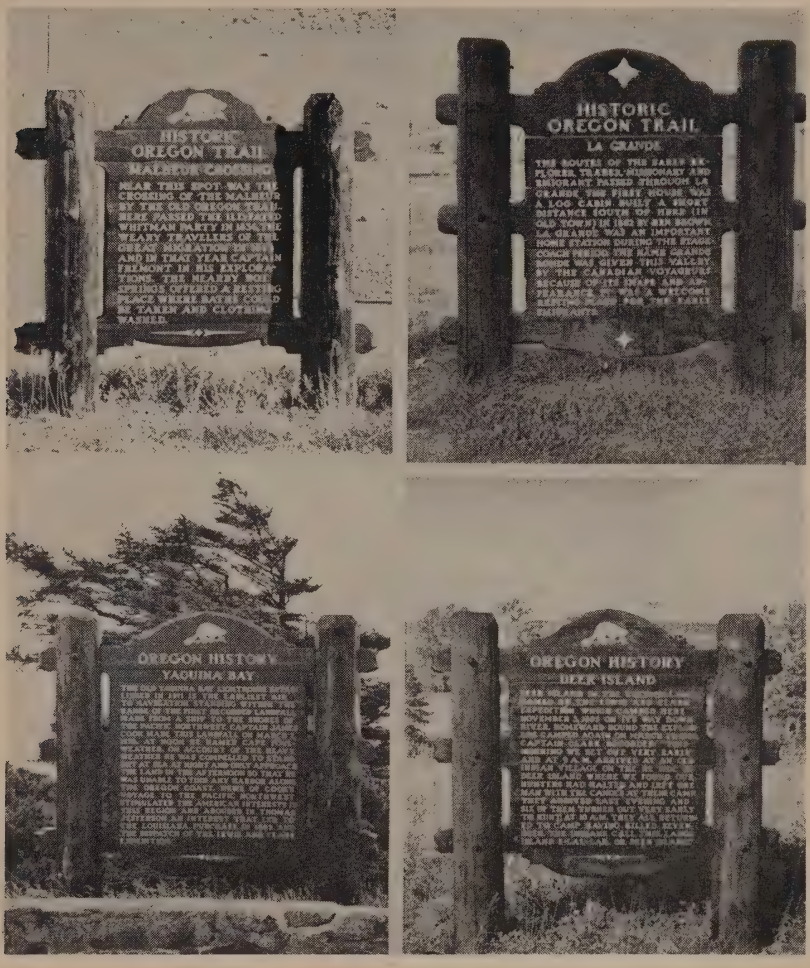
Attendance at Oregon's State Parks increased from 7,690,690 in 1956 to 8,626,475 in 1957. The 1958 figures indicate that the attendance may be one million or more greater than in 1957. When contrasted with the total attendance of 2,157,480 annual visitors of ten years ago, the trend in park use become more apparent.

Overnight camping attendance has increased from 216,443 camper nights in 1956 to 318,191 nights in 1957. An estimate of over 400,000 is made for 1958 attendance with an increase well above 25 per cent.

Revenue, which is obtained from overnight camping, from leases, salvage timber, and other miscellaneous sources, amounted to 9 per cent of the total gross amount expended on state parks in 1957. Overnight camping accounted for three-fourths of the total income, and estimates for 1958 show an increase of 27 per cent over 1957.

The planning and design section worked on a broad variety of park projects among which were studies of overnight camping requirements along the Oregon Coast and at several critical inland sections of the state. Field surveys of a number of potential sites were made in order to establish the most suitable areas for public use.

In addition to the studies carried on at existing parks, more than 50 other areas were inspected as to their desirability for state parks. Of this number, six new areas and five additions to existing parks were recommended for acquisition and were subsequently acquired. Other areas are still under consideration.



Forecast studies of future park needs are prepared through a continuing analysis of records which the planning section prepares on day use and camping attendance, origin of park users, recreation trends, and field studies of park utilization. Careful planning has made possible the coordination of park access with new highway locations.

It is anticipated that the policy of maintaining park facilities, which is developing the popularity of recreation in Oregon, will continue to improve and will further benefit the public's enjoyment of traveling in Oregon.

Nyssa Bridge over Snake River on Old Oregon Trail Highway in Malheur County.

REPORT OF TRAVEL INFORMATION DIVISION

CARL W. JORDAN, *Director*

A comprehensive invitational advertising program designed to increase use of Oregon highways by out-of-state motorists was presented during the biennium by the Travel Information Division.

Advertisement drew attention to a wide variety of recreational regions and to Oregon's fine highway system. Partly as a result of this invitational program, 12 million persons visited Oregon in the past two years and added an estimated $6 million to the state gasoline tax fund.

Travel Information Division advertising invited potential tourists throughout the United States and Canada to inquire by mail for information on vacationing in Oregon.

Most of the inquiries received from prospective visitors resulted from an intensive advertising campaign in the spring of each year. However, fall advertising programs were utilized to lengthen the vacation season.

Travel Information Division printed advertising was in sports, education, travel and general interest magazines, many Western newspapers and a representative selection of mid-Western and Eastern newspapers.

In addition, one minute participating spots were used on both television and radio stations in the nearby markets of California, Washington and Idaho.

The number of inquiries generated by this program set a record for the biennium when more than 300,000 pieces of mail were received and serviced by the division.

Distributed from the division office during the biennium were more than one million pieces of departmental literature and an estimated 600,000 pamphlets published by chambers of commerce, motels, hotels, resorts, highway associations and various areas and attractions.

During the biennium the division's advertising program was complemented by advertisements placed by local chambers of commerce or area associations. The advertising schedule of the division was made available to interested Oregon chambers of commerce and highway groups in order that they

might place their advertisements at the same time. Thus these organizations were able to take full advantage of the impact of the division's advertisements on prospective vacationists.

Division representatives and others representing Oregon attended 16 travel shows in California and the mid-West during the biennium. More than 2,500,000 persons attended these shows and many received free Oregon travel literature and information.

Another important part of the division's program has been the annual Travel Editors' Tour of Oregon. In the past two years eight prominent travel editors and writers have toured Oregon as guests of the Travel Division and the Pacific Northwest Travel Association, of which the division is a member.

The editorial support ultimately gained from the visits by these writers to the state's scenic attractions and regions has been valued at more than $50,000 annually.

Cooperation in the division's program during the biennium has come from travel organizations, hotels, motor courts, resorts, newspapers, magazines, radio and television stations, highway associations and transportation companies.

As a result of the interest of these agencies and facilities in the program, better public relations have been created between the visitors and those who serve them.

Annual surveys taken by the Traffic Engineering Division show that Oregon income from the travel business—the state's third largest industry—reached a record $280 million during the biennium. The previous high was established in the 1955-56 biennium when tourists spent an estimated $268 million in Oregon.

Surveys indicated that nearly three million foreign licensed vehicles came to Oregon during the past two years. These cars carried more than eight million persons. Average expenditure for each car was almost $90, and each vehicle drove an average of 540 miles, the computed studies revealed.

During the ensuing biennium, the division expects to continue its strong advertising program, with emphasis on Western markets.

In 1959, the Oregon Centennial Exposition and International Trade Fair will be a feature of the advertising campaign.

The Travel Division's major publications, "Oregon—Cool, Green Vacationland", "Oregon Outdoor Guide", "Oregon Highway Map" and "Oregon Schedule of Events", will be revised to carry a Centennial appeal.

A new, 13½-minute motion picture, "Vacation Adventures in Oregon State Parks", has been completed and will be utilized in the invitational program as well as being available for group showings within the state.

An Advisory Committee, comprised of community leaders from various sections of the state, establishes the operating policies of the division, and recommends advertising procedure to the State Highway Commission and State Highway Engineer. Members of this committee, established in 1936, are:

Frank Jenkins, Chairman	Klamath Falls
William M. Tugman	Reedsport
Ralph R. Cronise	Albany
J. W. Forrester, Jr.	Pendleton
Herb Grey	Medford
George M. Henderson	Portland
Fred E. Kiddle	Island City
Frank Loggan	Bend
Robert C. Notson	Portland
Arden X. Pangborn	Portland
Charles V. Stanton	Roseburg

Fords Bridge on U.S. 99 south of Myrtle Creek in Douglas County.

REPORT OF PERSONNEL AND PUBLIC RELATIONS DIVISION

A. G. HUNTLEY, *Director*

Goals and Aims

The successful operation of any industrial or government organization requires two predominate factors: *technical competence* and the *efficient management of people.*

Machines and equipment do not function without people to operate them and keep them in repair. Materials are not automatically conveyed. Surveys are not made, plans are not drawn, and highways and bridges are not built without people. Material things lie inert without the actions of man.

Good management means getting effective results with people. Personnel administration is a code of the ways of placing, organizing, and treating individuals at work so that they will each get the greatest possible realization of their own inherent abilities, thus attaining maximum efficiency for themselves and their particular work group, and thereby giving to the agency or enterprise of which they are a part its superiority in production and service.

It is to this end that the Personnel and Public Relations Division functions as a part of the State Highway Department.

At its meeting in September, 1956, the Oregon State Highway Commission authorized the establishment of a Division of Personnel and Public Relations. This action combined the existing Personnel Division and the various public relations activities which previously had been handled by each operating division.

This organizational change, the setting up of an office for centralized public relations activity, was in keeping with recommendations by the Bureau of Public Roads concerning Interstate activity and in line with the very successful practice in a number of states.

The objective of a public relations program in government is to gain public understanding of agency policies. Gaining this understanding and acceptance depends, for the most part, upon informing the public—accurately and promptly—of what the agency is doing and why it is doing it.

Public relations has been a part of the activity of divisions of the Highway Department for many years. However, the formation of a centralized program has increased both the quantity and quality of these efforts as well as providing many advantages to the individual divisions in their contacts with the public.

PERSONNEL

Salary and Classification Administration

During the mid-part of 1956 a salary survey was conducted. The survey was national in scope for some classification and regional for others, depending on the normal competitive areas. This survey was used by the Legislative Assembly and the results were incorporated in the Civil Service Commission's biennial salary survey. In July of 1957, based on the information in this survey, a general salary adjustment was made which covered most classifications.

Selection and Placement

At the beginning of the biennium there were 966 professional and sub-professional engineering employees. In July of 1958 the total stood at 1027 employees. This gain was primarily the result of increased activities under the Federal Aid Highway Act. A total of 483 engineering placements were made through the Personnel Section during the biennium period. Most of these placements were in the lower grades and reflect normal turnover. The average turnover for this group during the biennium was 2.62 per cent per month, the greater portion also being in the lower grades.

In 1956 the Personnel Section employed 45 new graduate civil engineers; 29 in 1957; and 16 up to the end of the biennium in 1958. These young men were recruited from accredited engineering schools located throughout the United States.

During the biennium there was a grand total of 2,112 placements which encompass a variety of fields, such as clerical, maintenance, accounting, weighmaster, right of way agent and park custodian positions.

The average monthly turnover for all employees for the

biennium was 2.34 per cent. This represents a decrease since the previous period.

Employee Relations

Employee relations is a subtle process—it can be classified along with intangible assets and is of the same nature as "good will" in business. Every effort is made to promote good relations: No employee's grievance is too trival to be "heard out" completely and an attempt made to settle it; an ordinary laborer applying for work receives the same courteous treatment as does a man with two engineering degrees; congratulations by letter to any one taking educational courses related to his work are sent; news releases are made to appropriate newspapers regarding promotions; letters of appreciation to candidates certified, interviewed, but not selected are sent; a multilithed welcoming letter from the State Highway Engineer and copies of employment benefits and conditions are sent to each new permanent employee—and a host of other small day to day activities are engaged in which add up to effective employee relations.

Employee Efficiency

The 3,500 employees of the Department are rated annually as to their efficiency on the job. The form is of the numerical, performance trait type, and is initiated by the immediate supervisor. This rating is reviewed and adjusted by at least two higher supervisors. The Personnel Division then adjusts all scores statistically to conform to a predetermined average and fixed deviation from this average.

The efficiency rating is used to determine eligibility for salary increases, to determine order of lay off, and as part of the score in promotional examinations.

All new employees are rated on a special form at the end of six months service to determine if they are to be retained as regular employees. Candidates failing to meet the proper standards by trial on the job are terminated.

Employee Training

In the early part of 1958 a formal one year Career Development Program for Selected Graduate Civil Engineers was

Relocated section of the Coos Bay-Roseburg Highway between North Fork Coquille River and Myrtle Point in Coos County.

initiated. In the past all training for graduate civil engineers has been conducted as on-the-job training. The new formal program represents another forward step in meeting department training needs. Candidates for the program are selected on the basis of previous work experience, performance, academic record and personality traits. These graduates are selected with the understanding that they intend to pursue a career in highway engineering in this department. At the completion of the one year work-study program, the graduate is given his first regular career assignment.

Academic training is also offered graduate engineers and other engineering employees at frequent intervals. These courses are arranged by the Personnel Section and offered through the Adult Education series or through the school of engineering at Oregon State College.

There were approximately 75 students employed during the summer of 1956 as a part of the formalized "Work-Study" program for undergraduate engineering students. Between

94 and 98 engineering students were employed during the summer of 1957. These men are hired and placed under a formal program where an ascending pay scale is used based on the year of engineering school the trainee has completed. Leave without pay is reserved for engineering students for summer employment. The work experience supplements the academic training these men receive, and thus give them valuable practical preparation toward a career in professional highway engineering.

PUBLIC RELATIONS

Federal Aid Program News

The expanded federal aid program, particularly as it pertains to freeways, has placed new and vital demands on the Department for effective public relations. The disrupting of regular traffic flow with the increased major construction, the by-passing of cities, the required limited access, the great sums of money mentioned in connection with these projects—all of these need to be properly interpreted to the public in terms of the necessity for safe, economical and convenient highways.

The Public Relations Section has a mailing list for news releases which contains over 200 regular outlets. Contacts are made with newspapers regarding their preferences in both news and photo coverage.

During the period of this report the office mailed 268 news releases and prepared four magazine articles. In addition to the above, the office assisted newspapers with special articles and contributed information and photographs to magazines for Oregon articles.

Public Appearances

The Public Relations staff prepared five television programs featuring department personnel. The staff prepared and presented 55 speeches to service clubs and other civic groups in all parts of the state. Additionally, they performed the important function of preparing material for many speeches presented by other department employees. This

service provides other department personnel with a source of general material, beyond the scope of their own activity, and enables them to carry out more effective public relations for the department as a whole.

State Parks

The Public Relations Section has been able to assume and expand many of the public relations activities of the State Parks Division. Speeches, colored slide presentations, exhibits, and news releases are used in connection with the Parks, highlighting these recreational centers which are of increasing importance to the Oregon public.

The Public Relations Section, in cooperation with the Travel Information Division, is responsible for Department exhibits at the State Fair.

Employee Awareness of Public Relations

One of the major public relations activities of the Division is the publication of "Personnel Observations", a bi-monthly magazine published for Department employees. This publication stresses important projects undertaken by the Department, thus giving due recognition to the employees associated with a particular project. At the same time, these articles inform all of the employees of various Departmental activities, providing the employee with a broader outlook as to the importance and full meaning of his own efforts and making him a better informed employee in his own formal and informal contacts with the public.

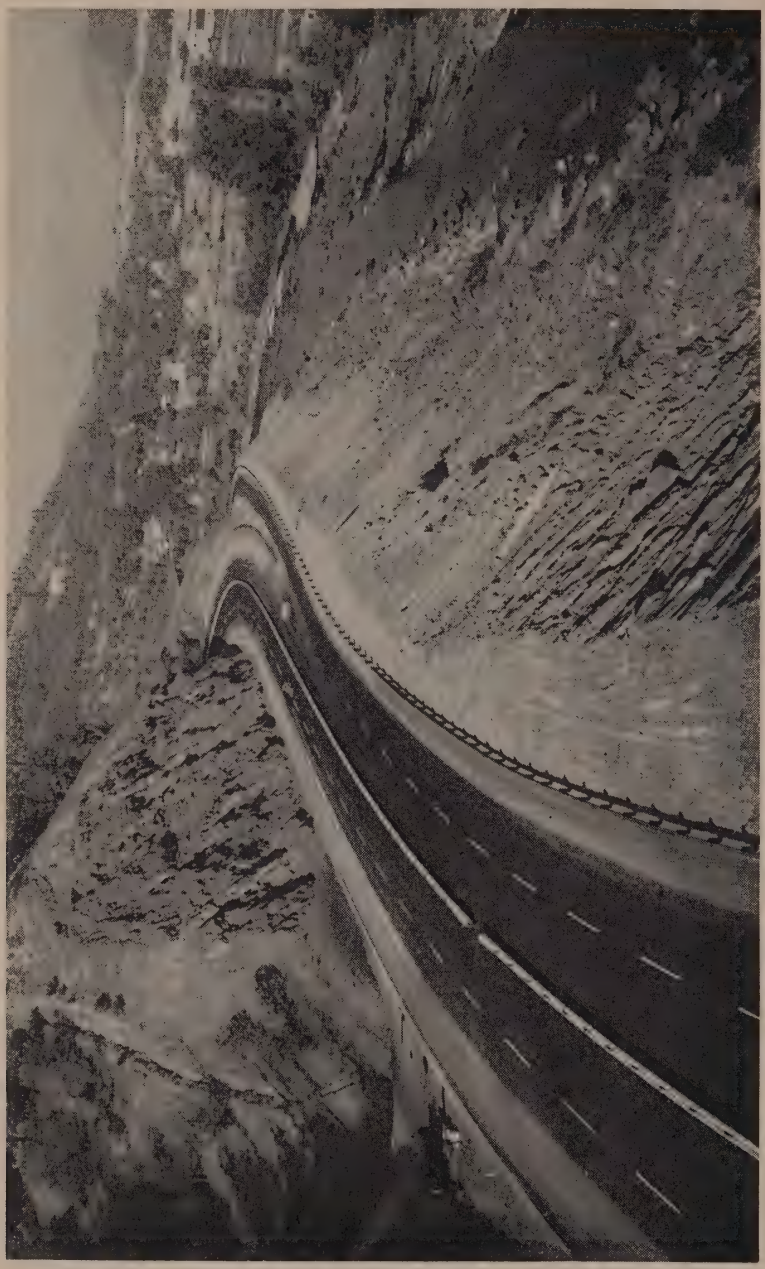
The publication also emphasizes material designed to better inform the employee as to Departmental and State policies and regulations. Promotions, retirements and other significant personal material also is given prominent mention, thus giving further recognition to the employee as an individual and providing him with a wider knowledge of the activities of his fellow-employees.

"Personnel Observations" has won national recognition as an employee publication. Over the period of this report, eight issues have been published with wide distribution to employees and interested outside groups.

Future Activity

Plans have been made for extensive public relations activity in the next biennium. Outlines have been made for three major booklets for public consumption: an attractive "Annual Report"; a "Right-of-Way Information" guide; and "Freeway Information" giving the details of activities in Oregon under the Federal Aid Highway Act.

In other phases of public relations, steps are planned to better inform newspaper editors of Department plans and aims. Special area stories are being proposed in connection with the building of the Interstate and other construction activity. Increased use of the television media has been outlined. Wider distribution of slides and motion pictures dealing with construction, maintenance and State parks is planned.



New location of U.S. 99 at Myrtle Creek, completed to 4-lane Interstate highway standard.

REPORT OF PERMIT DIVISION

R. B. SIPPRELL, *Director of Permits*

Operations of the Permit Division are divided into three separate sections—Utility Permits, Transportation Permits and Weighmasters. The functions and duties performed by each section are described separately.

Utility Permits

This section issues all permits, or franchises—to public or private utilities, cooperatives, agencies of the Federal government, municipalities, districts, firms or individuals—for the construction and maintenance of pole lines or pipe lines along or across state highway rights of way and over state park property. During the past biennium, a total of 934 such permits were issued. Oregon statutes require that any person wishing to construct an approach road to any non-access controlled highway must secure a written permit to do so. During the biennium 1,662 approach road permits were issued.

Other permits of miscellaneous types affecting the use of state highway rights of way are also issued by this section, including, during the past biennium, 76 permits to allow excavating, leveling and grading or installation of various structures upon the right of way; 79 permits to install banners over highways announcing civic or community events; four permits to erect lighted Christmas trees; and four permits to construct stairways.

Field investigation for all permits issued by the Utility Permit Section are handled by Division Engineers and District Maintenance Superintendents with some assistance from the Utility Permit Office in especially complicated situations. In addition, the Utility Permit Section makes field investigations of proposed crossings of state highways by private logging roads prior to hearings and issuance of permits by the Public Utilities Commissioner for such crossings.

Because of amendments to the statutes made by the Legislature in 1957 concerning the erection of signs on state highway rights of way, it will be necessary for the Utilities Permit Section to prepare and issue permits covering the erection of

signs on state highway rights of way pursuant to Highway Commission policy. This problem is now being studied.

Transportation Permits

This section issues permits for the movement of oversize vehicles or combinations of vehicles, or the transportation by motor truck of loads having a size or weight in excess of that allowed by the basic statutory limits; namely, 8 feet in width, 12½ feet in height, 35 feet in length for a single vehicle, 50 feet in length for a combination of vehicles, and 60,000 pounds combined gross weight.

By direction of the legislature, the Highway Commission first adopted a resolution in October 1953, and annually since that date, which had the effect of increasing the legal limits of length and weight on certain highways for the more commonly used types of truck-trailer combinations and obviated the necessity of obtaining a written permit. A color coded map, revised annually, is made available to the transport industry to indicate the types, sizes and weights of vehicle combinations and the highways over which they are authorized to operate without permit. Annual revisions of the resolution and map include additional highways that are proved capable of accommodating larger vehicles or combinations by observance of test runs.

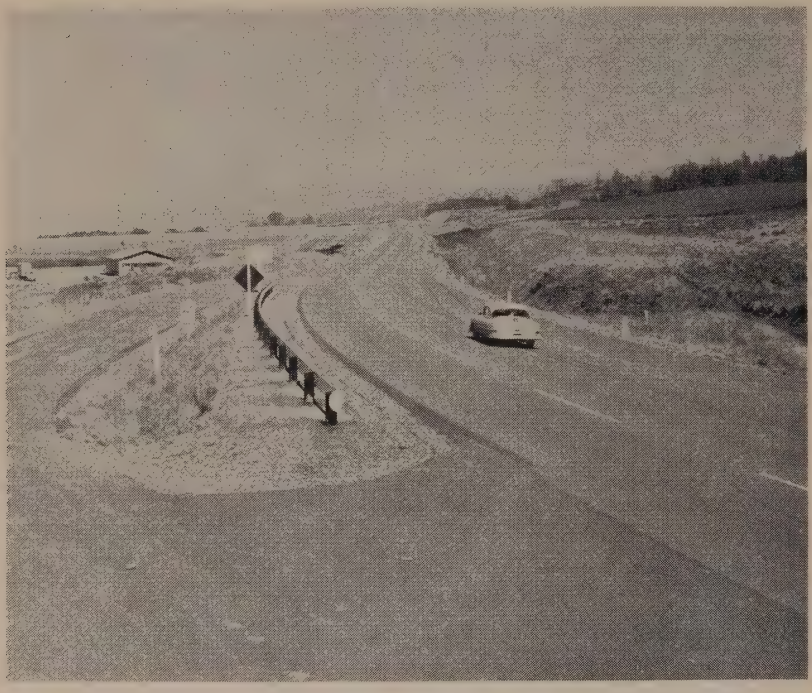
Under the authority of legislation passed in 1953, permits for the continuous operation of vehicles having a height of 13 feet 6 inches are issued to some types of truck-trailer equipment, excluding principally trucks that are engaged in hauling logs, lumber or baled hay. Continuous permits are also issued allowing operation of 40 foot busses and 40 foot semitrailers over a few selected interstate routes, and on a greater mileage of highways, of specially constructed truck-trailer combinations used for hauling automobiles and of cars or pickups pulling overlength trailer coaches.

A large percentage of permits issued is for the transportation of logs, poles or piling having length and/or weight in excess of the statutory limit. The maximum length allowed is dependent upon the geometric design of the highway and

the ability of the hauling equipment to negotiate the route without excessive infringement into the opposing lane of traffic as observed in hundreds of test runs. Flagman-escort conveyances are required in instances where considered necessary for the protection of the other travelling public. 5,454 such permits were issued during 1957, a drop of 1,880 from the number issued in 1956, which evidences a change in economic conditions and the consolidation of timber sources and mills into larger units.

By far the greatest percentage of transportation permits issued are special single trip permits for the movement of overdimensional and/or overweight vehicles, combinations of vehicles, or loads of a nature that cannot be readily reduced to legal size or weight. Mobile cranes or draglines, shovels, earth movers, tractors with or without blades or winches, logging donkeys, transformers, generator and rotor parts for hydro-electric plants, ship propellers and gears, boilers, houses and frame buildings, overwidth and overlength trailer coaches, are examples of the items moved under the authority of this type of permit. 35,222 permits were issued in 1957 as compared to 34,235 in 1956 and 27,151 in 1955. The greatest increase in any category is in the number of permits issued for the movement of overlength and/or overwidth (ten-footwide) trailer coaches. Permits for the movement of overlength, legal width trailer coaches increased from 993 in 1955 to 2,628 in 1956 and to 3,193 in 1957. Permits for the movement of overlength and overwidth trailer coaches, first authorized in August 1957, totalled 690 for the remainder of that year and 1,834 from January 1, 1958, to July 1, 1958.

Approximately two-thirds of these special single trip transportation permits are issued through the three division offices and thirteen district maintenance offices located throughout the state, excluding Portland and Salem. Permit offices are located also at Portland, where an Assistant Transportation Permit Supervisor is stationed, at Medford and Ontario, where the services of part-time permit clerks are utilized, and at Newport, Gold Beach and Brookings, through the cooperation of the local resident construction engineer's offices.



8-mile unit of U.S. 101 north of Gold Beach in Curry County. Constructed by Bureau of Public Roads.

Weighmasters

Operation of the Weighmaster Section constitutes the major expenditure of time and money in the Permit Division. An average of 81 weighmasters are employed throughout the state under the supervision of a Chief Weighmaster and two assistants. Twelve clerks and typists are employed in the headquarters office at Salem in the processing of records.

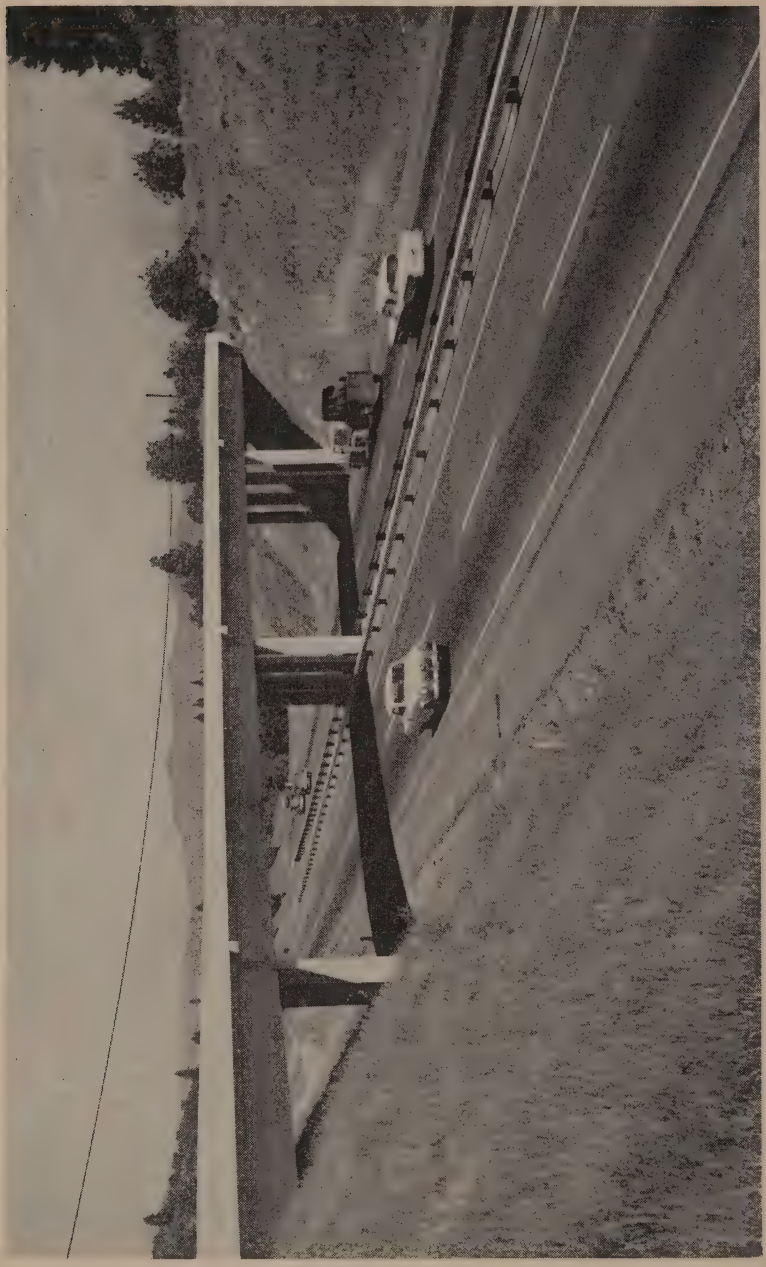
The 81 field weighmasters, which include eight area working supervisors and four assistant supervisors, operate fixed platform scales at 59 locations and in addition use 24 sets of loadometers or portable scales in weighing trucks for the purpose of obtaining compliance with the size and weight laws or the provisions of transportation permits. Seventy cars, pickups and panel trucks are used, 33 of them being equipped with two-way radios to provide a means of rapid communica-

tions between weighmasters and their headquarters or with the State Police. Sixteen of the busiest truck scales are equipped with telephones and nine have radio receivers.

A record of each truck weighing is made on punch cards and through the use of I.B.M. equipment of the Data Processing Division, comprehensive monthly and annual reports are prepared for the use and information of the Legislature, the Highway Department, other state agencies, and bona fide industry associations who are conscious of the damaging effects of overloading. These data have been invaluable to legislative and interim committees concerned with the size and weight laws, in providing factual information based on an average of approximately 508,000 weighings annually during the past five years. After data necessary for statistical reports is taken from the punch cards they are turned over to the Public Utilities Commissioner and these cards are an invaluable aid to him in auditing the records of carriers subject to the weight-mile tax.

Because legislatures have seen fit to give consideration to special problems in the log hauling industry and have granted concessions in weight to such trucks over the weights allowed for trucks hauling other commodities, it has been necessary to keep separate records for each. A summary of principal statistics obtained from the annual reports for the years 1952 to 1957 inclusive is shown below.

Logs, Poles, Piling	1952	1953	1954	1955	1956	1957
Loads Weighed	225,475	219,146	239,321	205,429	201,339	181,240
No. of weight violations	3,529	3,252	4,163	3,775	3,485	2,783
Percent of violations	1.57	1.48	1.74	1.84	1.73	1.54
Number of operators	4,630	4,555	4,643	4,608	4,747	4,080
Number of trucks	6,405	7,293	6,805	6,288	6,893	5,786
Fines and Costs (total)	$316,966	$252,548	$289,860	$264,765	$279,414	$214,652
Fines and Costs (ave.)	$ 98.50	$ 85.26	$ 76.80	$ 76.88	$ 86.61	$ 82.53
Cases pending as of June 30, 1958	311	290	389	331	259	182
Other Commodities						
Loads weighed	178,129	245,825	300,002	304,788	271,938	370,923
No. of weight violations	2,415	2,945	3,469	3,536	3,045	3,838
Percent of violations	1.36	1.20	1.16	1.16	1.12	1.03
No. of operators	7,206	9,178	10,234	10,638	11,335	12,229
Fines and Costs (total)	$132,517	$146,439	$162,721	$145,286	$154,121	$177,973
Fines and Costs (ave.)	$ 59.83	$ 53.41	$ 51.62	$ 44.62	$ 54.56	$ 48.92
Cases pending as of June 30, 1958	200	203	317	280	220	200



Merlin Hill Undercrossing on U.S. 99 north of Grants Pass in Josephine County.

REPORT OF DATA PROCESSING DIVISION

GEORGE LE TOURNEUX, *Director*

The Data Processing Division was formed in May, 1957, by merging the operations of the two tabulating machine installations formerly under the Accounting Division and the Traffic Division. It was felt that the consolidation of these two units and the addition of an electronic computer would enable all divisions of the highway department to make use of data processing procedures as well as making for more efficient utilization of existing machines and personnel.

Both of these objectives are being realized. In the area of increased efficiency occasioned by the consolidation, six major pieces of tabulating equipment have been released from rental since the merger despite a considerably increased work load. Most of the increased work load has come from areas within the department which were not previously using data processing equipment. Most of this growth has been due to the addition of the electronic computer—an International Business Machines Corporation Type 650 Magnetic Drum Data Processing Machine.

Some 50 applications are now being processed which were unable to be performed before installation of this machine. Not only are all types of engineering computations being processed, but also the computer has enabled the Data Processing Division to simplify and greatly expedite the processing of large masses of data previously done on other machines. Some operations can now be performed with only one-tenth of the machine time previously required on other types of equipment. When compared with manual operations the savings in time are considerably more striking. For example, bridge design computations require only about 1/40 of the time required by a bridge designer with an automatic desk calculator, as well as furnishing the designer with more complete analysis data. This same ratio of approximately 40 to 1 prevails on most engineering applications although there are a few where the ratio is much higher—in one case an estimated two years work in 6½ hours. The result has been that the department, in many cases, has been able to handle more work without a great increase in personnel.

Pine Creek Unit of the relocated Baker-Homestead Highway. Construction underway by Idaho Power Company.

The Data Processing Division now operates on a service bureau basis for all divisions within the State Highway Department as well as performing selected operations for other public agencies. Some of the routine applications performed during the processing of approximately 5½ million punched cards per year are shown in the following list segregated by divisions.

1. Accounting Division—Payrolls, cost accounting, and preparation of revenue and expenditure records.
2. Bridge Division—Structural design computations and bridge geometry calculations.
3. Construction Division—Survey calculations, roadway design computations, earth work volumes, project allocations and fund accounting, and construction needs inventory.

4. Landscape Division—Seed slope areas.
5. Legal and Right of Way Division—Timber cruise volumes for appraisal.
6. Maintenance Division—Equipment inventory and operating costs.
7. Materials Division—Computations of analyses of soil mechanics.
8. Office Engineering Division—Contract bid tabulations.
9. Parks Division—Historical records of park usage and camper activity.
10. Permits Division—Weighmaster truck weight summaries.
11. Personnel Division—Records of department personnel and preparation of special personnel reports and studies.
12. Traffic Division—Motor Vehicle accident reports, accident rate data, road costs and earnings, road inventories, and special planning and research studies.
13. Outside Agencies—Payrolls for Department of Finance and Administration, Special Veterinarian herd-testing fees for Department of Agriculture, Timber cruise volumes for State Tax Commission, and Tax assessment rolls for Marion County.

Section Three

Financial Statements

Covering the Fiscal Period

July 1, 1956, to June 30, 1958

AND

STATISTICAL INFORMATION

PERTAINING TO

State Highways and County Roads

IN THE

STATE OF OREGON

Wallowa Lake State Park near Joseph on State Highway Route 82 in Wallowa County.

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Table No. 1

DETAILED SUMMARY OF INCOME AND EXPENDITURES
July 1, 1956 to June 30, 1958

INCOME

Classification	Receipts July 1, 1956 to June 30, 1957	Receipts July 1, 1957 to June 30, 1958	Total Receipts July 1, 1956 to June 30, 1958
State Funds:			
Bond Sales (including accrued interest)	$	$20,205,801.03	$ 20,205,801.03
Motor vehicle license fees	11,032,347.64	10,544,440.61	21,576,788.25
Gasoline tax	33,835,924.12	33,771,826.24	67,607,750.36
Diesel fuel tax	54,633.32	65,044.80	119,678.12
Motor transportation fees	12,155,555.58	11,977,071.69	24,132,627.27
Traffic fines	460,386.98	455,466.48	915,853.46
Cash discount	47,047.54	33,243.96	80,291.50
Contribution to cities withheld	250,000.00	250,000.00	500,000.00
Interest on loan of bond funds	222,265.41	336,630.49	558,895.90
Refund from contributions to state police	35,222.97	.....	35,222.97
Subtotals, state funds	$58,093,383.56	$77,639,525.30	$135,732,908.86
Less Contributions:			
To state police	$ 1,671,517.00	$ 2,028,549.50	$ 3,700,066.50
To counties	10,951,100.66	10,889,735.94	21,840,836.60
To cities	5,703,933.60	5,660,700.75	11,364,634.35
Subtotals, contributions	$18,326,551.26	$18,578,986.19	$ 36,905,537.45
Totals, net income, state funds	$39,766,832.30	$59,060,539.11	$ 98,827,371.41
Cooperative Funds:			
City cooperative funds	$ 360,014.51	$ 166,634.45	$ 526,648.96
County cooperative funds	37,654.54	127,874.47	165,529.01
County payments on federal aid projects	1,009,495.29	882,775.39	1,892,270.68
Federal cooperative funds	19,319,706.80	25,608,520.61	44,928,227.41
Miscellaneous cooperative funds	27,661.39	846,583.71	874,245.10
Subtotals, cooperative funds	$20,754,532.53	$27,632,388.63	$ 48,386,921.16
Grand totals, net income	$60,521,364.83	$86,692,927.74	$147,214,292.57

Table No. 1—Continued

EXPENDITURES

Classification	Expenditures July 1, 1956 to June 30, 1957	Expenditures July 1, 1957 to June 30, 1958	Total Expenditures July 1, 1956 to June 30, 1958
Capital Outlays:			
Construction, primary highways	$23,046,594.00	$27,343,307.52	$ 50,389,901.52
Construction, secondary highways	4,926,643.45	4,556,893.60	9,483,537.05
Construction, county roads	3,654,087.82	4,376,173.83	8,030,261.65
Cooperation in forest road work	271.00	6,191.08	6,462.08
City allotment projects	267,845.04	275,190.11	543,035.15
Minor betterments	812,380.31	677,694.07	1,490,074.38
Surveys	1,512,548.16	1,602,379.79	3,114,927.95
Real property negotiation expense	144,781.76	150,054.26	294,836.02
Purchase of rights of way, quarries, etc.	5,148,035.03	4,860,699.05	10,008,734.08
Purchase of parks	14,006.71	41,787.87	55,794.58
Improvement in parks	742,617.93	813,821.76	1,556,439.69
Improvements at maintenance stations	95,236.76	202,360.99	297,597.75
Improvements of other properties	118,557.81	179,155.16	297,712.97
Equipment purchases less credits for sales and depreciation	696,484.84	569,106.14	1,265,590.98
Subtotals, capital outlays	$41,180,090.62	$45,654,815.23	$ 86,834,905.85
Maintenance:			
Contract maintenance	$ 694,271.35	$ 354,835.20	$ 1,049,106.55
General maintenance, primary	8,584,386.21	8,716,256.12	17,300,642.33
General maintenance, secondary	2,872,832.98	2,974,388.56	5,847,221.54
County road signs, etc.	31,533.08	34,807.38	66,340.46
District maintenance superintendence	427,382.87	418,455.03	846,337.90
Subtotals, maintenance	$12,610,906.49	$12,498,742.29	$ 25,109,648.78
Operation:			
Administration and general supervision	$ 2,328,966.69	$ 2,607,840.35	$ 4,936,807.04
Planning and traffic survey	801,206.27	743,596.93	1,544,803.20
Travel information division	306,543.25	313,345.77	619,889.02
Operation of parks	512,240.33	520,222.36	1,032,462.69
Rights of way leases, etc.	Cr. 75,201.49	Cr. 81,487.96	Cr. 156,689.45
Maintenance station upkeep	138,086.00	143,434.54	281,520.54
Radio communication system	66,818.07	91,883.68	158,701.75
Truck load inspection	526,266.33	614,949.73	1,141,216.06
Operation of drawbridges and ferries	321,208.00	362,400.46	683,608.46
Research and special investigation	37,576.92	29,495.38	67,072.30
Contribution to retirement fund	347,142.67	375,434.79	722,577.46
Contribution to social security	277,336.11	309,768.60	587,104.71
Legislative interim committee expense	9,452.06	10,907.54	20,359.60
Miscellaneous general expense	128,185.16	260,547.37	388,732.53
Subtotals, operation	$ 5,725,826.37	$ 6,302,339.54	$ 12,028,165.91
Service and clearing accounts	116,561.57	663,187.29	779,748.86
Bond interest and maturities	5,265,733.21	5,488,123.06	10,753,856.27
Total Expenditures	$64,899,118.26	$70,607,207.41	$135,506,325.67

Table No. 2

SUMMARY OF EXPENDITURES JULY 1, 1956 TO JUNE 30, 1957

Classification of Expenditures	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Construction, primary highways	$23,046,594.00	$11,409,017.42	$	$11,563,958.80	$ 73,617.78
Construction, secondary highways	4,926,643.45	2,151,782.71		2,569,773.00	205,087.74
Construction, county roads	3,654,087.82	650,005.95	1,045,475.87	1,958,606.00	
Cooperation in forest road work	271.00	271.00			
City allotment projects	267,845.04	236,545.43			31,299.61
Minor betterments	812,380.31	737,079.19	1,673.96		73,627.16
Surveys	1,512,548.16	1,508,504.55			4,043.61
Real property negotiation expense	144,781.76	144,781.76			
Purchase of rights of way, quarries, etc.	5,148,035.03	4,525,595.03		622,440.00	
Purchase of parks	14,006.71	14,006.71			
Improvements in parks	742,617.93	742,617.93			
Improvements at maintenance stations	95,236.76	95,236.76			
Improvements of other properties	118,557.81	118,557.81			
Equipment purchases less credits for sales and depreciation	696,484.84	696,484.84			
Subtotals, capital outlays	$41,180,090.62	$23,030,487.09	$ 1,047,149.83	$16,714,777.80	$ 387,675.90
Contract maintenance	$ 694,271.35	$ 694,271.35	$	$	$
General maintenance, primary	8,584,386.21	8,584,386.21			
General maintenance, secondary	2,872,832.98	2,872,832.98			
County road signs, etc.	31,533.08	31,533.08			
District maintenance superintendence	427,882.87	427,882.87			
Subtotals, maintenance	$12,610,906.49	$12,610,906.49	$	$	$
Administration and general supervision	$ 2,328,966.69	$ 2,328,966.69	$	$	$
Planning and traffic survey	801,206.27	409,870.27		391,336.00	
Travel information division	306,543.25	306,543.25			
Operation of parks	512,240.33	512,240.33			
Rights of way leases, etc.	Cr. 75,201.49	Cr. 75,201.49			
Maintenance station upkeep	138,086.00	138,086.00			
Radio communication system	66,818.07	66,818.07			
Truck load inspection	526,266.33	526,266.33			
Operation of drawbridges and ferries	321,208.00	321,208.00			
Research and special investigation	37,576.92	37,576.92			
Contribution to retirement fund	347,142.67	347,142.67			
Contribution to social security	277,336.11	277,336.11			
Legislative interim committee expense	9,452.06	9,452.06			
Miscellaneous general expense	128,185.16	128,185.16			
Subtotals, operation	$ 5,725,826.37	$ 5,334,490.37	$	$ 391,336.00	$
Service and clearing accounts	$ 116,561.57	$ 116,561.57	$	$	$
Bond interest and maturities	5,265,733.21	3,052,140.21		2,213,593.00	
Total expenditures	$64,899,118.26	$44,144,585.73	$ 1,047,149.83	$19,319,706.80	$ 387,675.90

Table No. 2—Continued

SUMMARY OF EXPENDITURES JULY 1, 1957 TO JUNE 30, 1958

Classification of Expenditures	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Construction, primary highways	$27,343,307.52	$ 8,951,940.49	$ 103,257.78	$17,383,596.00	$ 904,513.25
Construction, secondary highways	4,556,893.60	1,748,118.61	.....	2,746,071.00	62,703.99
Construction, county roads	4,376,173.83	883,198.75	907,392.08	2,585,583.00	.....
Cooperation in forest road work	6,191.08	6,191.08	.....	.....	.....
City allotment projects	275,190.11	259,823.22	.....	.....	15,366.89
Minor betterments	677,694.07	664,130.50	.....	.....	13,563.57
Surveys	1,602,379.79	1,585,309.33	.....	.....	17,070.46
Real property negotiation expense	150,054.26	150,054.26	.....	.....	.....
Purchase of rights of way, quarries, etc.	4,860,699.05	4,799,910.44	.....	60,788.61	.....
Purchase of parks	41,787.87	41,787.87	.....	.....	.....
Improvements in parks	813,821.76	813,821.76	.....	.....	.....
Improvements at maintenance stations	202,360.99	202,360.99	.....	.....	.....
Improvements of other properties	179,155.16	179,155.16	.....	.....	.....
Equipment purchases less credits for sales and depreciation	569,106.14	569,106.14	.....	.....	.....
Subtotals, capital outlays	$45,654,815.23	$20,854,908.60	$ 1,010,649.86	$22,776,038.61	$ 1,013,218.16
Contract maintenance	$ 354,835.20	$ 354,835.20	$	$	$ .....
General maintenance, primary	8,716,256.12	8,716,256.12	.....	.....	.....
General maintenance, secondary	2,974,388.56	2,974,388.56	.....	.....	.....
County road signs, etc.	34,807.38	34,807.38	.....	.....	.....
District maintenance superintendence	418,455.03	418,455.03	.....	.....	.....
Subtotals, maintenance	$12,498,742.29	$12,498,742.29	$	$	$ .....
Administration and general supervision	$ 2,607,840.35	$ 2,607,840.35	$	$	$ .....
Planning and traffic survey	743,596.93	73,020.93	.....	670,576.00	.....
Travel information division	313,345.77	313,345.77	.....	.....	.....
Operation of parks	520,222.36	520,222.36	.....	.....	.....
Rights of way leases, etc.	Cr. 81,487.96	Cr. 81,487.96	.....	.....	.....
Maintenance station upkeep	143,434.54	143,434.54	.....	.....	.....
Radio communication system	91,883.68	91,883.68	.....	.....	.....
Truck load inspection	614,949.73	614,949.73	.....	.....	.....
Operation of drawbridges and ferries	29,495.38	29,495.38	.....	.....	.....
Research and special investigation	375,434.79	375,434.79	.....	.....	.....
Contribution to retirement fund	375,434.79	375,434.79	.....	.....	.....
Contribution to social security	309,768.60	309,768.60	.....	.....	.....
Legislative interim committee expense	10,907.54	10,907.54	.....	.....	.....
Miscellaneous general expense	260,547.37	260,547.37	.....	.....	.....
Subtotals, operation	$ 6,302,339.54	$ 5,631,763.54	$	$ 670,576.00	$ .....
Service and clearing accounts	$ 663,187.29	$ 663,187.29	$	$	$ .....
Bond interest and maturities	5,488,123.06	3,326,217.06	.....	2,161,906.00	.....
Total expenditures	$70,607,207.41	$42,974,818.78	$ 1,010,649.86	$25,608,520.61	$ 1,013,218.16

Table No. 3

MILEAGES OF HIGHWAY CONSTRUCTION WORK PERFORMED by the STATE HIGHWAY COMMISSION

Highway System and Year	Concrete Pavement (Miles)	Bituminous Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surface (Miles)	Rock and Gravel Surface (Miles)	Grading (Miles)	Bridges Over 20 feet (No.)	Separation (No.)
Primary:								
1917-1954	372.0	1,442.5	1,238.0	3,547.7	5,545.1	4,983.7	1,279	182
1955	0.2	171.9	.....	64.7	186.8	158.0	52	72
1956	.....	135.1	.....	77.6	143.4	89.8	24	21
1957	.....	128.7	.....	94.9	121.3	101.6	25	12
1958	9.1	52.5	.....	10.5	71.8	104.1	41	31
Totals	381.3	1,930.7	1,238.0	3,795.4	6,068.4	5,437.2	1,421	318
Secondary:								
1933-1954	8.7	200.7	59.7	1,262.5	1,382.2	925.0	145	15
1955	.....	41.4	.....	49.6	65.4	43.7	4	1
1956	.....	45.5	.....	44.3	45.8	40.5	7	4
1957	.....	35.1	.....	74.8	64.6	44.7	7	2
1958	.....	1.7	.....	34.6	46.3	43.5	7	.....
Totals	8.7	324.4	59.7	1,465.8	1,604.3	1,097.4	170	22
Other Roads:								
1935-1954	7.3	120.2	41.7	513.8	589.6	392.2	64	7
1955	.....	22.4	.....	77.7	55.6	46.1	26	.....
1956	.....	23.6	.....	48.1	68.1	51.2	15	.....
1957	.....	33.5	.....	59.1	53.4	48.2	22	.....
1958	.....	21.2	.....	85.4	78.1	60.1	27	1
Totals	7.3	220.9	41.7	784.1	844.8	597.8	154	8

Table No. 4

MILEAGES OF STATE HIGHWAYS MAINTAINED by the STATE HIGHWAY COMMISSION

Highway System and Year	Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Rock Surfacing	Unoiled Rock Surfacing	Graded and Unimproved Earth	Total
Primary:							
1953	296	984	1,249	2,206	94	8	4,837
1954	287	1,138	1,226	2,113	71	36	4,871
1955	279	1,348	1,181	2,128	50	37	5,023
1956	247	1,394	1,212	1,902	39	36	4,830
1957	253	1,474	1,121	1,893	39	36	4,816
Secondary:							
1953	44	330	71	1,521	436	113	2,515
1954	45	356	61	1,485	427	117	2,491
1955	54	452	69	1,460	435	115	2,585
1956	60	500	85	1,448	420	131	2,644
1957	64	533	79	1,444	403	125	2,648

Table No. 5

STATE FUNDS RECEIVED AND EXPENDED BY THE STATE HIGHWAY COMMISSION
From 1917 to June 30, 1958

Year	Net Receipts (State Funds Only)	Net Expenditures (State Funds Only)
1917-1919 (including $94,418.14 balance from 1916)	$ 11,020,404.42	$ 9,166,561.64
1920	11,320,354.05	11,381,606.97
1921	13,550,136.40	15,045,824.65
1922	9,608,966.45	7,724,688.96
1923	7,664,977.79	7,287,991.77
1924	6,115,536.48	6,916,867.91
1925	10,231,908.30	10,611,283.45
1926	7,345,080.19	7,927,130.75
1927	8,627,279.00	8,474,609.91
1928	8,721,396.09	8,975,204.79
1929	10,658,473.58	10,160,542.57
1930	13,897,663.65	12,808,014.45
1931	10,930,545.38	11,108,835.57
1932	9,925,665.72	10,812,369.81
1933	7,804,925.99	7,860,497.50
1934	8,798,396.81	7,517,063.41
1935	14,469,922.86	13,687,022.82
1936	10,943,742.46	13,194,698.50
1937	11,921,069.07	12,595,127.42
1938	11,418,916.44	11,261,453.70
1939	11,771,364.62	11,158,189.25
1940	12,759,332.27	12,156,575.57
1941	15,093,637.57	14,874,800.01
1942	13,450,738.45	13,290,781.61
1943	11,738,155.10	9,128,388.61
1944	11,714,984.39	8,499,431.13
1945	13,224,169.64	7,635,689.97
1946	18,681,153.29	15,336,831.64
1947	19,783,754.69	19,282,928.54
1948	20,170,681.21	25,057,168.91
1949	19,231,769.16	27,317,223.60
1950	31,367,429.18	28,443,846.33
1951	45,988,972.78	33,413,778.37
1952	47,899,533.72	49,479,889.01
1953	76,564,299.65	50,429,167.98
1954	35,673,374.88	54,592,668.50
1955	38,286,882.07	46,337,197.89
1956	39,494,255.19	45,215,884.74
1957	59,102,761.48	41,998,690.80
1958 (to June 30)	17,110,552.01	19,681,536.91
Totals	$764,083,162.48	$737,848,065.92
Balance on hand, July 1, 1958		$ 26,235,096.56
Total		$764,083,162.48

Table No. 6

YEARLY EXPENDITURES ON WORK HANDLED UNDER THE SUPERVISION OF THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1958

Year	State Funds	County Funds	Government Funds	Miscellaneous Funds	Totals
1917-1918	$ 2,888,257.48	$ 709,724.79	$	$	$ 3,597,982.27
1919-1920	17,659,911.13	1,235,386.96	1,320,878.93	19,364.26	20,235,541.28
1921-1922	22,770,513.61	4,711,685.07	3,225,651.72	168,268.13	30,876,118.53
1923-1924	14,204,859.68	3,724,533.62	2,837,866.24	285,226.61	21,052,486.15
1925-1926	18,538,414.20	2,001,962.21	2,592,017.66	182,399.75	23,314,793.82
1927-1928	17,449,814.70	1,295,207.74	1,693,961.84	92,702.90	20,531,687.18
1929-1930	22,968,557.02	812,986.39	2,189,703.62	24,523.86	25,995,770.89
1931-1932	21,921,205.38	402,102.27	6,238,438.61	83,460.71	28,645,206.97
1933-1934	15,377,560.91	342,749.03	8,747,717.40	30,434.55	24,498,461.89
1935	13,687,022.82	133,562.57	4,165,503.33	10,000.00	17,996,088.72
1936	13,194,698.50	129,233.41	6,375,343.26	8,773.61	19,708,048.78
1937	12,595,127.42	80,174.48	4,589,894.89	62,146.90	17,327,343.69
1938	11,261,453.70	186,284.48	2,873,801.64	25,000.00	14,346,539.82
1939	11,158,189.25	9,480.34	2,652,475.77	12,202.46	13,832,347.82
1940	12,156,575.57	4,000.00	2,926,250.31	30,976.06	15,117,801.94
1941	14,874,800.01	62,041.05	2,810,894.93	7,250.00	17,754,985.99
1942	13,290,781.61	8,492.08	2,273,616.82	13,926.38	15,586,816.89
1943	9,128,388.61	1,550.00	4,341,584.26	32,500.00	13,504,022.87
1944	8,499,431.13	8,550.00	3,108,858.22	30,112.71	11,646,952.06
1945	7,635,689.97	1,550.00	2,290,000.27	861.01	9,928,101.25
1946	15,336,831.64	1,550.00	2,339,091.54	385.08	17,677,858.26
1947	19,282,928.54	16,200.00	6,771,812.00	22,421.33	26,093,361.87
1948	25,057,168.91	19,722.70	6,180,173.46	31,318.34	31,288,383.41
1949	27,317,223.60	269,590.62	6,555,119.04	71,522.66	34,213,455.92
1950	28,443,846.33	150,124.60	6,586,420.35	214,307.28	35,394,698.56
1951	33,413,778.37	256,393.83	7,327,746.25	553,510.52	41,551,428.97
1952	49,479,889.01	382,570.69	7,334,398.41	357,570.45	57,554,428.56
1953	50,429,167.98	482,206.33	8,859,076.91	236,740.71	60,007,191.93
1954	54,592,668.50	439,708.25	10,028,460.50	156,052.29	65,216,889.54
1955	46,337,197.89	1,006,484.22	10,708,344.92	810,376.42	58,862,403.45
1956	45,215,884.74	956,061.16	14,740,739.80	292,602.00	61,205,287.70
1957	41,998,690.80	1,134,295.73	25,772,629.00	473,387.56	69,379,003.09
1958 (to June 30)	19,681,536.91	345,215.06	7,404,558.61	851,883.13	28,283,193.71
Totals	$737,848,065.92	$ 21,321,379.68	$187,863,030.51	$ 5,192,207.67	$952,224,683.78

Table No. 7

SUMMARY OF EXPENDITURES BY MAJOR ITEMS
From 1917 to June 30, 1958

Classification of Expenditures	Total Expended	Expenditures by Funds: State	County	Federal	Miscellaneous
Capital Outlays:					
Contract construction	$460,980,646.94	$262,838,006.55	$ 20,689,336.92	$172,656,575.19	$ 4,796,728.28
Cooperation in forest road work	8,121,955.82	7,627,605.45	494,350.37	.....	.....
Minor betterments	15,567,132.23	15,288,368.32	6,946.70	4,000.00	267,817.21
Surveys	18,036,279.34	17,680,639.40	15,672.21	299,849.80	40,117.93
Subtotals, construction	$502,706,014.33	$303,434,619.72	$ 21,206,306.20	$172,960,424.99	$ 5,104,663.42
Rights of way, quarries, etc.	$ 51,799,025.18	$ 50,894,634.03	$ 9,909.75	$ 894,481.40	$ .....
Parks	5,810,495.38	5,795,516.38	.....	14,979.00	.....
Buildings and improvements (except parks)	6,645,210.33	6,612,750.73	.....	32,459.60	.....
Equipment (subsequent to 1934 only)	6,096,632.31	6,096,632.31	.....	.....	.....
Subtotals, capital outlays (including construction)	$573,057,377.53	$372,834,153.17	$ 21,216,215.95	$173,902,344.99	$ 5,104,663.42
Maintenance:					
Contract maintenance	$ 15,295,610.48	$ 14,863,453.95	$ 2,516.17	$ 343,877.98	$ 85,762.38
General maintenance	179,105,030.36	178,963,019.96	85,848.05	54,380.48	1,781.87
Other maintenance items	5,516,071.02	5,512,645.89	.....	3,425.13	.....
Subtotals, maintenance	$199,916,711.86	$199,339,119.80	$ 88,364.22	$ 401,683.59	$ 87,544.25
Miscellaneous:					
Administration and general supervision	$ 28,229,690.03	$ 28,229,690.03	$	$	$ .....
Miscellaneous operation	39,660,436.65	37,089,957.21	16,799.51	2,553,679.93	.....
Bond interest and maturities	111,360,467.71	100,355,145.71	.....	11,005,322.00	.....
Subtotals, miscellaneous	$179,250,594.39	$165,674,792.95	$ 16,799.51	$ 13,559,001.93	.....
Totals	$952,224,683.78	$737,848,065.92	$ 21,321,379.68	$187,863,030.51	$ 5,192,207.67

Table No. 8

SUMMARY OF EXPENDITURES
From 1917 to June 30, 1958

Classification of Expenditures	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Construction, primary highways (includes flight strips)	$366,719,402.08	$218,138,428.78	$ 14,288,520.44	$131,044,398.22	$ 3,248,054.64
Construction, secondary highways	57,039,652.78	30,547,882.28	827,371.67	25,005,596.82	658,802.01
Construction, county roads	34,437,250.73	11,712,377.51	5,573,444.81	16,606,580.15	544,848.26
Cooperation in forest road work	8,121,955.82	7,627,605.45	494,350.37		
City allotment projects	2,784,341.35	2,439,317.98			345,023.37
Minor betterments	15,567,132.23	15,288,368.32	6,946.70	4,000.00	267,817.21
Surveys and engineering county work	18,036,279.34	17,680,639.40	15,672.21	299,849.80	40,117.93
Real property negotiation expense	2,008,522.08	2,008,522.08			
Purchase of rights of way, quarries, etc.	49,790,503.10	48,886,111.95	9,909.75	894,481.40	
Purchase of parks	1,214,163.49	1,214,163.49			
Improvements in parks	4,596,331.89	4,581,352.89		14,979.00	
Improvements in maintenance stations, etc.	6,645,210.33	6,612,750.73		32,459.60	
Equipment purchases less sales and depreciation	6,096,632.31	6,096,632.31			
Subtotals, capital outlays	$573,057,377.53	$372,834,153.17	$ 21,216,215.95	$173,902,344.99	$ 5,104,663.42
Contract maintenance	$ 15,295,610.48	$ 14,863,453.95	$ 2,516.17	$ 343,877.98	$ 85,762.38
General maintenance, primary	138,436,438.88	138,304,708.17	81,352.02	48,596.82	1,781.87
General maintenance, secondary	39,420,519.82	39,415,148.03	1,968.62	3,403.17	
County road signs, etc.	1,248,071.66	1,243,163.76	2,527.41	2,380.49	
Maintenance of city streets (1941-1947)	366,868.64	363,443.51		3,425.13	
District maintenance superintendence	5,149,202.38	5,149,202.38			
Subtotals, maintenance	$199,916,711.86	$199,339,119.80	$ 88,364.22	$ 401,683.59	$ 87,544.25
Administration and general supervision	$ 28,229,690.03	$ 28,229,690.03	$	$	$
Planning and traffic surveys	5,827,185.88	3,298,777.95		2,528,407.93	
Travel information division	3,989,012.78	3,989,012.78			
Operation and maintenance of parks	4,374,911.36	4,374,911.36			
Operation of drawbridges and ferries	4,155,353.24	4,138,553.73	16,799.51		
Maintenance station and truck scale upkeep	1,596,933.17	1,596,933.17			
Radio communication system	687,836.70	662,564.70		25,272.00	
Truck load inspection	4,359,635.82	4,359,635.82			
Contributions to retirement funds	6,205,356.72	6,205,356.72			
Miscellaneous general expense	4,338,306.53	4,338,306.53			
Subtotals, operation	$ 63,764,222.23	$ 61,193,742.79	$ 16,799.51	$ 2,553,679.93	$
Service and clearing accounts	$ 4,125,904.45	$ 4,125,904.45	$	$	$
Bond interest and maturities	111,360,467.71	100,355,145.71		11,005,322.00	
Totals	$952,224,683.78	$737,848,065.92	$ 21,321,379.68	$187,863,030.51	$ 5,192,207.67

Table No. 9

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES
From 1917 to June 30, 1958

Source of Income	1917 to 1951 Inclusive	1952	1953	1954	1955
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ .....
Bond sales (including accrued interest)	69,347,003.37	14,836,604.17	41,438,208.75	.....	.....
Motor vehicle license fees	119,470,482.55	9,968,662.65	9,750,122.49	9,971,384.89	10,521,302.33
Gasoline tax	302,063,638.35	29,950,450.31	30,369,918.97	30,481,970.30	32,457,937.76
Diesel fuel tax	1,248,896.94	48,362.91	44,560.55	41,752.26	42,878.39
Motor transportation fees	41,902,681.91	6,675,148.30	9,499,848.86	9,903,061.05	11,125,016.16
One-quarter mill property tax	1,724,032.33	.....	.....	.....	.....
Fines for traffic law violations	2,156,421.37	393,408.71	386,070.48	401,352.43	448,217.84
Cash discounts	854,548.58	25,687.35	31,356.14	39,536.54	29,644.29
Contributions to cities withheld	1,125,000.00	250,000.00	250,000.00	250,000.00	250,000.00
Receipts from counties to apply on loans	986,648.22	140,949.75	20,000.00	.....	.....
Refund of contributions to state police	241,155.49	47,854.08	.....	4,168.97	.....
Interest on loan of bond funds	.....	52,417.27	248,629.84	796,171.91	433,650.17
Subtotals, state funds (gross)	$541,214,927.25	$ 62,389,545.50	$ 92,038,716.08	$ 51,889,398.35	$ 55,308,646.94
Less contributions to state police	$ 9,805,982.85	$ 1,149,167.00	$ 1,356,573.50	$ 1,563,980.00	$ 1,617,748.50
Less contributions to counties	61,844,734.11	8,776,276.26	9,262,118.90	9,648,873.24	10,145,176.33
Less contributions to state general fund	313,103.37	.....	.....	.....	.....
Less contributions to cities	18,172,005.47	4,564,568.52	4,835,724.03	5,003,170.23	5,258,840.04
Less loans to counties	1,127,597.97	.....	20,000.00	.....	.....
Subtotals, state funds (net)	$449,951,503.48	$ 47,899,533.72	$ 76,564,299.65	$ 35,673,374.88	$ 38,286,882.07
County cooperative funds	$ 16,574,838.24	$ 382,570.69	$ 482,206.33	$ 439,708.25	$ 1,006,484.22
Federal cooperative funds	103,014,822.36	7,334,398.41	8,859,076.91	10,028,460.50	10,708,344.92
Miscellaneous cooperative funds	2,013,595.11	357,570.45	236,740.71	156,052.29	810,376.42
Totals	$571,554,759.19	$ 55,974,073.27	$ 86,142,323.60	$ 46,297,595.92	$ 50,812,087.63

Table No. 9—Continued

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES
From 1917 to June 30, 1958

Source of Income	1917 to 1955 Inclusive	1956	1957	1958 (to June 30)	1917 to June 30, 1958
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ 94,418.14
Bond sales (including accrued interest)	125,621,816.29		20,205,801.03		145,827,617.32
Motor vehicle license fees	159,681,954.91	10,855,170.50	10,936,981.06	6,021,224.37	187,495,330.84
Gasoline tax	425,323,915.69	33,725,478.12	33,536,616.10	14,504,867.57	507,090,877.48
Diesel fuel tax	1,426,451.05	48,923.69	57,921.78	36,465.99	1,569,762.51
Motor transportation fees	79,105,756.28	12,000,137.36	11,703,461.97	5,495,561.66	108,304,917.27
One-quarter mill property tax	1,724,032.33				1,724,032.33
Fines for traffic law violations	3,785,470.83	458,550.01	429,948.41	232,497.71	4,906,466.96
Cash discounts	980,772.90	44,730.45	34,952.38	18,648.47	1,079,104.20
Contributions to cities withheld	2,125,000.00	250,000.00	250,000.00	125,000.00	2,750,000.00
Receipts from counties to apply on loans	1,147,597.97				1,147,597.97
Refund of contributions to state police	293,178.54	35,222.97			328,401.51
Interest on loan of bond funds	1,530,869.19	120,086.34	304,039.21	232,235.11	2,187,229.85
Subtotals, state funds (gross)	$802,841,234.12	$ 57,538,299.44	$ 77,459,721.94	$ 26,666,500.88	$964,505,756.38
Less contributions to state police	$15,493,451.85	$ 1,671,517.00	$ 1,850,033.25	$ 1,014,274.75	$ 20,029,276.85
Less contributions to counties	99,677,178.84	10,797,304.40	10,758,505.78	5,492,208.75	126,725,197.77
Less contributions to state general fund	313,103.37				313,103.37
Less contributions to cities	37,834,308.29	5,575,222.85	5,748,421.43	3,049,465.37	52,207,417.94
Less loans to counties	1,147,597.97				1,147,597.97
Subtotals, state funds (net)	$648,375,593.80	$ 39,494,255.19	$ 59,102,761.48	$ 17,110,552.01	$764,083,162.48
County cooperative funds	$ 18,885,807.73	$ 956,061.16	$ 1,134,295.73	$ 345,215.06	$ 21,321,379.68
Federal cooperative funds	139,945,103.10	14,740,739.80	25,772,629.00	7,404,558.61	187,863,030.51
Miscellaneous cooperative funds	3,574,334.98	292,602.00	473,387.56	851,883.13	5,192,207.67
Totals	$810,780,839.61	$ 55,483,658.15	$ 86,483,073.77	$ 25,712,208.81	$978,459,780.34

Table No. 10

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1958

The expenditures in this table include all expenditures in connection with work handled under the direct supervision of the State Highway Commission during the period December 1, 1916 to June 30, 1958.

Classification of Expenditures	1917 to 1951 Inclusive	1952	1953	1954	1955
Construction, primary highways	$213,695,432.31	$ 25,830,259.79	$ 28,093,379.63	$ 29,751,608.28	$ 24,749,847.14
Construction, secondary highways	26,200,617.30	3,579,355.47	2,786,964.82	2,291,772.12	3,033,293.77
Construction, county roads	12,821,728.74	1,799,645.53	2,306,132.94	2,027,201.52	2,654,809.76
Cooperation in forest road work	8,064,679.46	26,493.82	20,364.65	1,813.96	2,141.85
City allotment projects	1,094,944.57	284,440.40	265,041.73	281,873.60	303,913.93
Minor betterments	10,885,936.22	598,439.18	764,228.82	735,337.65	778,493.97
Surveys and engineering county work	8,534,422.48	1,251,350.13	1,371,955.14	1,408,991.43	1,535,621.40
Subtotals, construction	$281,297,761.08	$ 33,369,984.32	$ 35,608,067.73	$ 36,498,598.56	$ 33,058,121.82
Real property negotiation expense	$ 1,014,990.17	$ 140,493.84	$ 154,153.09	$ 152,525.48	$ 160,176.21
Purchase of rights of way, quarries, etc.	16,969,543.98	6,046,721.58	4,103,355.91	6,266,251.84	3,880,125.44
Purchase of parks	1,096,334.05	58,773.16	Cr. 20,143.46	Cr. 26,448.74	44,288.00
Improvements in parks	1,180,202.98	396,471.08	477,507.64	375,443.63	365,345.91
Improvements of maintenance stations, etc.	4,213,394.54	495,628.04	742,759.24	361,174.48	142,703.18
Equipment purchases less sales and depreciation	3,584,386.74	398,395.52	332,985.15	167,048.53	115,098.88
Subtotals, capitol outlays (including construction)	$309,356,613.54	$ 40,906,467.54	$ 41,398,685.30	$ 43,794,593.78	$ 37,765,859.44

Contract maintenance	$ 13,011,883.62	$ 432,821.02	$ 348,387.60	$ 212,354.64	$ 216,115.23
General maintenance, primary	87,915,811.69	7,908,155.04	7,522,247.32	7,785,168.29	7,754,668.39
General maintenance, secondary	20,323,870.90	2,568,931.51	2,647,992.21	2,617,452.07	2,490,767.15
County road signs, etc.	297,636.57	21,604.17	36,134.92	36,143.56	32,465.83
Maintenance of city streets (1941-1947)	366,868.64	.....	.....	.....	.....
District maintenance superintendence	3,486,132.91	289,987.95	.....*	.....*	345,360.66
Subtotals, maintenance	$125,402,204.33	$ 11,221,499.69	$ 10,554,762.05	$ 10,651,118.56	$ 10,839,377.26
Administration and general supervision	$ 14,089,283.23	$ 1,695,800.95	$ 2,196,885.50	$ 2,357,624.50	$ 1,927,164.69
Planning and traffic surveys	2,522,413.15	308,566.91	371,347.04	420,543.47	433,610.34
Travel information division	2,064,229.96	255,186.98	281,211.19	265,173.99	263,664.15
Operation and maintenance of parks	1,621,232.98	314,885.31	366,826.87	399,086.47	418,213.02
Operation of drawbridges and ferries	2,329,672.25	216,408.66	236,418.93	234,029.70	289,546.64
Maintenance station and truck scale upkeep	724,148.44	120,566.59	135,397.84	112,336.53	129,569.09
Radio communication system	292,991.83	41,447.19	48,232.63	52,782.37	56,537.66
Truck load inspection	1,405,034.15	328,231.42	371,037.41	392,675.90	466,870.92
Contributions to retirement funds	2,179,278.86	510,649.36	533,432.57	676,561.43	637,073.99
Miscellaneous	3,612,746.74	186,033.50	164,734.90	71,290.98	97,346.98
Subtotals, operation	$ 30,841,031.59	$ 3,977,776.87	$ 4,705,524.88	$ 4,982,105.34	$ 4,719,597.48
Service and clearing accounts	$ 2,187,625.82	$ 42,346.89	$ 1,001,513.27	$ 253,036.73	$ 66,482.76
Bond interest and maturities	83,928,810.52	1,406,337.57	2,346,706.43	5,536,035.13	5,471,086.51
Totals	$551,716,285.80	$ 57,554,428.56	$ 60,007,191.93	$ 65,216,889.54	$ 58,862,403.45

* District maintenance supervision carried in administration and general supervision during 1953 and 1954.

Table No. 10—Continued

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1958

Classification of Expenditures	1956	1957	1958 (to June 30)	Reclassification Transfers	1917 to June 30, 1958
Construction, primary highways	$ 22,093,494.07	$ 26,141,417.12	$ 9,046,545.00	Cr. $12,682,581.26	$366,719,402.08
Construction, secondary highways	4,286,523.05	4,908,643.93	1,360,371.14	8,592,111.18	57,039,652.78
Construction, county roads	3,050,286.01	4,645,397.87	1,107,857.76	4,024,190.60	34,437,250.73
Cooperation in forest road work	.....	6,462.08	.....	.....	8,121,955.82
City allotment projects	255,231.39	267,713.31	31,182.42	.....	2,784,341.35
Minor betterments	805,538.40	720,972.75	278,126.24	59.00	15,567,132.23
Surveys and engineering county work	1,511,569.09	1,560,194.36	862,175.31	.....	18,036,279.34
Subtotals, construction	$ 32,002,642.01	$ 38,250,801.42	$ 12,686,257.87	$ Cr. 66,220.48	$502,706,014.33
Real property negotiation expense	$ 176,388.82	$ 144,452.25	$ 65,342.22	$	$ 2,008,522.08
Purchase of rights of way, quarries, etc.	5,098,445.42	4,791,420.35	2,649,886.72	Cr. 15,248.14	49,790,503.10
Purchase of parks	13,937.33	18,549.93	28,873.22	.....	1,214,163.49
Improvements in parks	583,212.90	708,069.11	488,477.24	21,601.40	4,596,331.89
Improvements of maintenance stations, etc.	212,232.91	254,409.06	164,206.61	58,702.27	6,645,210.33
Equipment purchases less sales and depreciation	300,948.67	513,560.20	684,208.62	.....	6,096,632.31
Subtotals, capitol outlays (including construction)	$ 38,387,808.06	$ 44,681,262.32	$ 16,767,252.50	$ Cr. 1,164.95	$573,057,377.53

Contract maintenance	$ 619,307.40	$ 424,089.85	$ 45,788.70	$ Cr. 15,137.58	$ 15,295,610.48
General maintenance, primary	8,881,474.57	8,882,629.78	4,117,040.07	Cr. 2,330,756.27	138,436,438.88
General maintenance, secondary	2,740,879.59	2,978,707.89	1,473,663.93	1,578,254.57	39,420,519.82
County road signs, etc.	28,299.93	33,097.16	21,109.24	741,580.28	1,248,071.66
Maintenance of city streets (1941-1947)	.....	.....	.....	.....	366,868.64
District maintenance superintendence	378,893.72	405,839.15	216,987.99	26,000.00	5,149,202.38
Subtotals, maintenance	$ 12,648,855.21	$ 12,724,363.83	$ 5,874,589.93	$ Cr. 59.00	$199,916,711.86
Administration and general supervision	$ 2,158,852.69	$ 2,497,060.98	$ 1,303,293.54	$ 3,723.95	$ 28,229,690.03
Planning and traffic surveys	489,815.99	940,916.59	339,972.39	.....	5,827,185.88
Traffic information division	313,316.37	302,375.14	243,855.00	.....	3,989,012.78
Operation and maintenance of parks	469,813.49	528,158.73	256,694.49	.....	4,374,911.36
Operation of drawbridges and ferries	307,520.93	314,346.93	227,409.20	.....	4,155,353.24
Maintenance station and truck scale upkeep	114,548.33	156,869.80	61,846.64	41,649.91	1,596,933.17
Radio communication system	64,911.58	85,003.81	45,929.63	.....	687,836.70
Truck load inspection	489,170.23	569,192.85	318,340.69	19,082.25	4,359,635.82
Contributions to retirement funds	645,949.52	635,910.18	386,500.81	.....	6,205,356.72
Miscellaneous	58,244.13	118,666.24	92,475.22	Cr. 63,232.16	4,338,306.53
Subtotals, operation	$ 5,112,143.26	$ 6,148,501.25	$ 3,276,317.61	$ 1,223.95	$ 63,764,222.23
Service and clearing accounts	$ Cr. 268,580.04	$ 607,507.83	$ 235,971.19	$	$ 4,125,904.45
Bond interest and maturities	5,325,061.21	5,217,367.86	2,129,062.48	.....	111,360,467.71
Totals	$ 61,205,287.70	$ 69,379,003.09	$ 28,283,193.71	$	$952,224,683.78

Table No. 11

PRIMARY HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1958

Kinds of expenditures are the same as included in Table No. 13

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
1.	Pacific	$ 98,356,614.80	$ 72,308,216.44	$ 473,494.42	$ 25,422,421.46	$ 152,482.48
1E.	Pacific, East	11,579,860.35	6,297,122.61	97,042.37	5,024,765.18	160,930.19
1W.	Pacific, West	26,659,777.29	15,711,514.45	359,482.68	10,519,392.28	69,387.88
2.	Columbia River	70,250,884.75	48,686,550.87	343,434.92	19,912,489.03	1,308,409.93
3.	Oswego	1,098,666.57	745,564.10	168,309.82	145,600.00	39,192.65
4.	The Dalles-California	17,906,948.16	11,156,543.45	945,356.19	5,684,331.89	120,716.63
5.	John Day	8,574,588.75	4,546,852.96	595,738.05	3,428,747.74	3,250.00
6.	Old Oregon Trail	24,170,604.44	12,922,715.90	565,992.40	9,593,475.40	1,088,420.74
7.	Central Oregon	8,906,421.73	5,689,059.85	154,287.80	3,063,074.08	
8.	Oregon-Washington	2,168,047.84	1,641,707.63	72,649.31	448,547.06	5,143.84
9.	Oregon Coast	56,803,702.41	41,262,793.37	2,040,136.13	13,410,171.45	90,601.46
10.	Wallowa Lake	3,316,813.43	1,915,386.85	534,913.04	851,132.67	15,380.87
11.	Enterprise-Lewiston	1,188,388.54	883,705.05	71,621.49	233,062.00	
12.	Baker-Homestead	2,628,907.15	1,170,193.68	377,811.17	1,026,124.12	54,778.18
13.	Baker-Unity	2,488,542.56	1,606,592.26	331,113.14	510,999.85	39,837.31
14.	Crooked River	467,510.27	369,009.29	98,500.98		
15.	McKenzie	4,528,464.47	2,563,537.40	427,755.02	1,499,630.76	37,541.29
16.	Santiam	3,553,440.59	2,374,724.50	232,885.28	891,635.96	54,194.85
17.	McKenzie-Bend	701,090.96	385,581.76	5,509.20	310,000.00	
18.	Willamette	5,661,518.71	3,590,959.16	311,897.95	1,629,891.09	128,770.51
19.	Fremont	2,277,502.90	1,200,525.05	190,273.36	886,704.49	
20.	Klamath Falls-Lakeview	4,326,212.77	2,931,836.12	265,269.22	1,124,330.65	4,776.78
21.	Green Springs	2,177,422.51	1,154,243.09	557,877.85	438,529.42	26,772.15
22.	Crater Lake	4,105,851.64	2,220,169.68	195,895.65	1,689,786.31	
23.	Dairy-Bonanza	123,544.72	88,680.92	34,863.80		
24.	Burns-Crane	821,773.14	369,048.04	48,156.79	404,568.31	
25.	Redwood	2,682,637.96	1,776,888.19	54,507.82	851,241.95	
26.	Mt. Hood	4,411,122.71	2,954,012.40	748,969.84	702,325.02	5,815.45
27.	Alsea	2,243,412.36	1,655,290.40	278,757.08	309,364.88	
28.	Pendleton-John Day	3,272,470.64	1,716,749.45	162,236.66	1,393,232.10	252.43
29.	Tualatin Valley	5,613,971.43	4,009,885.12	177,813.38	1,394,953.64	31,319.29
30.	Willamina-Salem	4,800,505.80	2,640,803.05	280,089.77	1,861,038.29	18,574.69
31.	Albany-Corvallis	635,116.96	163,281.29	130,101.15	299,593.00	42,141.52
32.	Three Rivers	703,455.46	623,165.03	21,646.19	58,644.24	
33.	Corvallis-Newport	3,780,211.41	3,152,124.58	249,205.22	370,261.35	8,620.26
34.	Siuslaw	3,042,011.47	2,381,076.51	476,293.56	184,641.40	
35.	Coos Bay-Roseburg	3,627,864.45	2,085,046.04	649,440.43	867,277.98	16,100.00
36.	Pendleton-Cold Springs	476,337.98	204,864.72	191,239.44	80,233.82	
37.	Wilson River	6,359,332.65	5,000,927.36		1,358,405.29	
38.	Oregon Caves	476,292.83	462,292.83	14,000.00		
39.	Salmon River	4,264,271.99	2,846,679.31	58,106.99	1,369,485.69	
40.	Beaverton-Hillsdale	1,628,769.54	1,111,690.57	61,252.97	455,826.00	
41.	Ochoco	3,960,756.92	2,749,473.09	150,281.19	1,058,502.64	2,500.00
42.	Sherman	2,652,560.67	1,391,948.03	360,879.73	897,985.12	1,747.79
43.	Monmouth-Independence	80,376.51	80,376.51			
44.	Wapinitia	359,067.89	172,199.05		186,868.84	
45.	Umpqua	3,027,220.78	1,235,159.23	366,174.97	1,425,886.58	
46.	Necanicum	717,056.17	408,197.56	148,986.77	159,871.84	
47.	Sunset	9,449,291.97	5,302,872.35	92,000.00	4,054,419.62	
48.	John Day-Burns	549,467.99	370,475.99		178,992.00	
49.	Lakeview-Burns	786,760.82	538,716.11	31,604.06	216,440.65	
50.	Klamath Falls-Malin	1,874,085.01	1,333,058.83	77,816.14	444,315.28	18,894.76
51.	Wilsonville-Hubbard	800,746.66	339,695.38		461,051.28	
52.	Heppner	1,786,588.99	1,210,516.81	315,066.35	254,796.00	6,209.83
53.	Warm Springs	3,577,532.45	1,942,773.27		1,634,759.18	
54.	Umatilla-Stanfield	625,178.29	320,729.33	54,183.50	250,265.46	
55.	Halfway	254,167.32	93,129.89	122,798.01	38,239.42	
	Undistributed, all state	638,580.17	638,580.17			
	Undistributed, county general	103,802.37	68,193.51	35,608.86		
	Flight strips	1,130,789.90	625.36		1,130,164.54	
	Totals	$445,234,917.97	$294,774,331.80	$ 14,809,328.11	$132,098,494.30	$ 3,552,763.76

Table No. 12

PRIMARY HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1958

Kinds of expenditures are same as included in Table 14

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
1.	Pacific	$ 10,569,014.92	$ 10,557,369.22	$ 11,645.70	$	$
1E.	Pacific, East	5,080,939.20	4,848,679.29	1,167.26	167,898.00	63,194.65
1W.	Pacific, West	3,656,398.20	3,650,200.27	6,197.93		
2.	Columbia River	10,965,269.69	10,950,947.93	12,556.40	870.80	894.56
3.	Oswego	494,477.84	494,477.84			
4.	The Dalles-California	8,824,298.31	8,813,870.20	769.57	9,658.54	
5.	John Day	6,605,757.86	6,600,699.87	5,057.99		
6.	Old Oregon Trail	9,403,844.87	9,360,104.51	1,228.14	42,512.22	
7.	Central Oregon	4,728,266.05	4,724,550.27	15.45	3,700.33	
8.	Oregon-Washington	923,493.63	919,212.46	4,281.17		
9.	Oregon Coast	17,371,221.96	17,326,610.98	4,501.67	39,109.31	1,000.00
10.	Wallowa Lake	2,678,064.32	2,678,064.32			
11.	Enterprise-Lewiston	748,003.04	748,003.04			
12.	Baker-Homestead	1,099,705.53	1,099,609.82	95.71		
13.	Baker-Unity	1,000,068.73	1,000,068.73			
14.	Crooked River	283,027.55	283,027.55			
15.	McKenzie	3,246,034.97	3,234,735.46		11,299.51	
16.	Santiam	3,946,890.21	3,930,358.56		7,544.16	8,987.49
17.	McKenzie-Bend	474,189.30	470,533.40		3,655.90	
18.	Willamette	4,088,879.88	4,088,879.88			
19.	Fremont	2,477,155.26	2,464,063.43		13,091.83	
20.	Klamath Falls Lakeview	2,263,496.05	2,261,846.63		1,649.42	
21.	Green Springs	2,387,625.12	2,387,424.35	200.77		
22.	Crater Lake	2,296,771.64	2,262,477.28		34,294.36	
23.	Dairy-Bonanza	138,894.36	138,894.36			
24.	Burns-Crane	428,379.15	428,282.68	96.47		
25.	Redwood	1,142,985.34	1,142,985.34			
26.	Mt. Hood	3,923,544.97	3,912,993.93		10,551.04	
27.	Alsea	1,795,011.20	1,795,011.20			
28.	Pendleton-John Day	3,033,030.66	3,033,030.66			
29.	Tualatin Valley	1,337,863.59	1,327,870.38	9,993.21		
30.	Willamina-Salem	894,136.11	894,100.10	36.01		
31.	Albany-Corvallis	223,266.08	222,466.08	800.00		
32.	Three Rivers	1,453,942.33	1,437,004.88	16,937.45		
33.	Corvallis-Newport	2,515,120.24	2,512,529.45	320.50	2,270.29	
34.	Siuslaw	2,547,245.10	2,535,752.79		11,492.31	
35.	Coos Bay-Roseburg	3,652,462.58	3,641,566.30	3,238.17	7,058.11	
36.	Pendleton-Cold Springs	526,218.91	526,218.91			
37.	Wilson River	2,040,502.52	2,040,502.52			
38.	Oregon Caves	292,394.78	292,394.78			
39.	Salmon River	1,594,073.29	1,593,772.37	300.92		
40.	Beaverton-Hillsdale	257,166.21	255,426.26	1,739.95		
41.	Ochoco	3,094,323.00	3,094,323.00			
42.	Sherman	1,999,579.15	1,992,271.99		7,307.16	
43.	Monmouth-Independence	101,099.40	101,099.40			
44.	Wapinitia	731,644.28	731,644.28			
45.	Umpqua	1,481,617.91	1,481,617.91			
46.	Necanicum	959,073.15	959,073.15			
47.	Sunset	2,715,484.59	2,715,484.59			
48.	John Day-Burns	1,215,574.76	1,215,574.76			
49.	Lakeview-Burns	971,835.44	971,835.44			
50.	Klamath Falls-Malin	712,930.26	712,930.26			
51.	Wilsonville-Hubbard	47,226.68	47,226.68			
52.	Heppner	1,301,317.61	1,296,726.12		4,591.49	
53.	Warm Springs	1,567,593.59	1,567,593.59			
54.	Umatilla-Stanfield	500,709.45	500,709.45			
55.	Halfway	274,658.49	274,558.04	100.45		
	Maintenance Supervision	4,112,574.64	4,112,574.64			
	Undistributed	167,998.15	167,998.15			
	Totals	$155,364,372.10	$154,829,859.73	$ 81,880.89	$ 378,554.78	$ 74,076.70

Table No. 13

PRIMARY HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1958

This table gives the totals of the expenditures made for primary state highway construction work in each of the several counties during the 42-year period ending June 30, 1958. It includes expenditures for construction, minor betterments, surveys, rights of way, and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 9,284,478.61	$ 4,839,638.41	$ 1,007,557.69	$ 3,302,665.01	$ 134,617.50
Benton	5,165,073.92	3,560,946.70	372,439.94	1,196,834.80	34,852.48
Clackamas	11,744,611.96	8,432,737.22	482,535.78	2,674,268.41	155,070.55
Clatsop	12,868,817.33	7,231,440.58	448,340.54	5,170,083.52	18,952.69
Columbia	6,731,439.08	4,997,046.44	12,060.23	1,716,629.78	5,702.63
Coos	16,690,436.73	11,938,372.58	839,123.48	3,880,569.73	32,370.94
Crook	1,664,634.82	1,169,284.85	192,238.85	300,611.12	2,500.00
Curry	13,515,059.18	11,423,921.84	216,142.72	1,874,994.62	----
Deschutes	7,391,752.94	5,104,461.11	151,423.83	2,114,522.50	21,345.50
Douglas	46,267,240.65	33,939,145.34	1,114,777.16	11,177,538.26	35,779.89
Gilliam	5,604,472.31	3,794,233.65	266,278.07	1,528,690.62	15,269.97
Grant	5,250,915.31	2,794,518.24	185,034.28	2,271,362.79	----
Harney	5,197,085.48	2,772,243.75	128,701.27	2,296,140.46	----
Hood River	14,094,494.12	12,110,248.54	283,001.46	1,665,882.60	35,361.52
Jackson	15,456,113.47	10,603,926.90	474,090.19	4,270,383.76	107,712.62
Jefferson	3,556,944.04	1,850,119.25	92,282.18	1,601,075.75	13,466.86
Josephine	11,193,708.78	6,657,153.74	110,077.78	4,417,498.27	8,978.99
Klamath	17,841,293.71	11,098,747.07	681,622.94	5,945,488.26	115,435.44
Lake	3,812,594.79	2,509,475.68	233,414.80	1,068,704.31	1,000.00
Lane	25,288,494.66	17,223,248.46	1,723,608.74	6,143,872.73	197,764.73
Lincoln	14,274,872.80	10,738,680.63	195,049.44	3,333,704.20	7,438.53
Linn	10,804,456.50	6,558,341.89	444,522.78	3,687,125.24	114,466.59
Malheur	11,060,882.60	5,859,710.85	192,501.04	4,102,363.06	906,307.65
Marion	19,476,124.54	12,930,765.17	241,862.34	6,252,307.11	51,189.92
Morrow	3,035,342.02	1,912,309.26	311,879.96	804,942.97	6,209.83
Multnomah	51,085,090.28	32,567,755.51	425,090.90	17,890,815.38	201,428.49
Polk	6,951,997.92	4,095,010.99	139,641.54	2,704,234.16	13,111.23
Sherman	3,383,258.03	1,686,624.28	273,903.11	1,023,000.23	399,730.41
Tillamook	9,761,915.79	6,224,956.52	500,432.99	2,996,356.32	40,169.96
Umatilla	14,172,233.40	8,470,019.65	577,287.37	4,886,561.94	238,364.44
Union	8,341,223.35	4,763,212.72	590,047.80	2,852,720.76	135,242.07
Wallowa	2,677,206.15	1,733,643.05	354,528.61	578,733.62	10,300.87
Wasco	16,317,498.00	9,652,161.93	859,229.05	5,364,059.75	442,047.27
Washington	20,444,884.13	14,924,175.96	100,412.78	5,390,421.24	29,874.15
Wheeler	4,633,529.36	2,929,960.01	171,598.91	1,531,970.44	----
Yamhill	8,425,604.25	5,037,120.61	416,587.56	2,951,196.04	20,700.04
Flight strips	1,130,789.90	625.36	----	1,130,164.54	----
Undistributed	638,347.06	638,347.06	----	----	----
Totals	$445,234,917.97	$294,774,331.80	$ 14,809,328.11	$132,098,494.30	$ 3,552,763.76
Construction	$366,719,402.08	$218,138,428.78	$ 14,288,520.44	$131,044,398.22	$ 3,248,054.64
Minor Betterment	12,678,995.09	12,404,231.38	6,172.52	4,000.00	264,591.19
Surveys	13,963,888.00	13,693,181.02	10,375.03	220,214.02	40,117.93
Rights of Way	44,564,179.73	43,724,387.92	9,909.75	829,882.06	----
Forest Roads	7,308,453.07	6,814,102.70	494,350.37	----	----
Totals	$445,234,917.97	$294,774,331.80	$ 14,809,328.11	$132,098,494.30	$ 3,552,763.76

Table No. 14

PRIMARY STATE HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

Years 1917 to June 30, 1958, Inclusive

This table gives the totals of the expenditures made for primary state highway maintenance work in each of the several counties during the 42-year period ending June 30, 1958. It includes all expenditures for contract maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 5,534,926.97	$ 5,534,730.81	$ 196.16	$	$
Benton	3,144,093.02	3,142,977.21	1,115.81		
Clackamas	4,189,993.48	4,189,752.51	240.97		
Clatsop	4,595,782.20	4,586,091.53	8,796.11		894.56
Columbia	1,827,161.73	1,827,161.73			
Coos	6,432,122.27	6,394,811.79	6,728.62	30,581.86	
Crook	1,540,799.37	1,540,799.37			
Curry	4,469,332.99	4,464,955.13	205.18	4,172.68	
Deschutes	4,578,336.20	4,566,089.85	240.10	12,006.25	
Douglas	8,213,969.10	8,209,828.27	4,140.83		
Gilliam	2,316,107.76	2,313,808.62	2,299.14		
Grant	4,473,453.76	4,471,023.59	2,430.17		
Harney	3,035,302.92	3,035,191.00	111.92		
Hood River	3,122,495.26	3,111,944.22		10,551.04	
Jackson	5,636,035.21	5,597,536.19	4,547.33	33,951.69	
Jefferson	1,930,496.24	1,924,675.32		5,820.92	
Josephine	2,580,846.43	2,579,204.84	1,641.59		
Klamath	9,025,191.45	9,020,962.64	48.52	4,180.29	
Lake	3,616,052.54	3,601,311.29		14,741.25	
Lane	11,017,271.23	10,995,835.25	1,899.06	19,536.92	
Lincoln	4,892,236.63	4,886,510.67	320.50	5,405.46	
Linn	4,420,280.47	4,404,810.40	333.54	6,149.04	8,987.49
Malheur	4,356,555.98	4,356,096.22	459.76		
Marion	1,946,425.15	1,946,214.74	210.41		
Morrow	2,017,031.17	2,009,462.95	2,976.73	4,591.49	
Multnomah	5,357,913.52	5,126,820.87		167,898.00	63,194.65
Polk	2,030,368.14	2,029,786.01	582.13		
Sherman	2,121,718.14	2,114,410.98		7,307.16	
Tillamook	5,417,174.43	5,399,117.13	8,779.59	8,277.71	1,000.00
Umatilla	6,673,234.44	6,625,252.21	4,599.21	43,383.02	
Union	4,274,781.47	4,274,266.78	514.69		
Wallowa	2,038,621.01	2,038,621.01			
Wasco	5,445,038.82	5,444,262.21	776.61		
Washington	3,206,239.26	3,194,698.51	11,540.75		
Wheeler	2,940,451.63	2,938,757.91	1,693.72		
Yamhill	2,665,958.92	2,651,507.18	14,451.74		
Maintenance Supervision	4,112,574.64	4,112,574.64			
Undistributed	167,998.15	167,998.15			
Totals	$155,364,372.10	$154,829,859.73	$ 81,880.89	$ 378,554.78	$ 74,076.70
General Maintenance	$138,268,457.14	$138,136,726.43	$ 81,352.02	$ 48,596.82	$ 1,781.87
Contract Maintenance	12,815,342.17	12,412,560.51	528.87	329,957.96	72,294.83
Maintenance Supervision	4,112,574.64	4,112,574.64			
Undistributed	167,998.15	167,998.15			
Totals	$155,364,372.10	$154,829,859.73	$ 81,880.89	$ 378,554.78	$ 74,076.70

Table No. 15

SECONDARY STATE HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1958

This table gives the totals of the expenditures made for secondary state highway construction work in each of the several counties during the 42-year period ending June 30, 1958. It includes expenditures for construction, minor betterment, surveys, rights of way, and state expenditures in connection with forest road work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 648,872.77	$ 394,968.77	$	$ 253,904.00	$
Benton	920,621.45	735,102.79		185,518.66	
Clackamas	3,752,642.08	2,345,066.64	47,825.95	1,359,749.49	
Clatsop	1,296,660.39	796,560.52	9,070.98	491,028.89	
Columbia	812,338.97	421,751.14		390,587.83	
Coos	2,898,063.93	1,649,129.34	2,000.00	1,184,169.85	62,764.74
Crook	2,531,752.45	1,266,042.22	64,606.79	1,201,103.44	
Curry	50,838.54	27,959.28		22,879.26	
Deschutes	544,339.82	344,697.51	36,245.19	163,397.12	
Douglas	4,075,016.40	2,825,883.28	83,565.29	1,159,267.32	6,300.51
Gilliam	807,729.36	570,551.64		237,177.72	
Grant	997,498.07	526,701.32	9,086.75	461,710.00	
Harney	1,075,186.44	593,927.74	23,196.60	458,062.10	
Hood River	438,827.43	287,874.75		150,952.68	
Jackson	2,268,283.41	1,421,146.78	50,658.25	785,978.38	10,500.00
Jefferson	509,671.14	221,400.65	32,340.00	255,930.49	
Josephine	754,284.44	444,738.83		309,545.61	
Klamath	2,002,009.20	1,086,502.14	70,558.62	844,948.44	
Lake	963,344.28	523,749.83		439,594.45	
Lane	5,703,724.95	3,963,016.30	120,979.81	1,538,474.06	81,254.78
Lincoln	1,424,214.17	891,240.27		532,973.90	
Linn	1,476,613.54	952,691.09	23,000.00	474,088.79	26,833.66
Malheur	6,088,902.69	2,536,545.98	64,224.82	3,302,437.02	185,694.87
Marion	6,705,227.37	4,027,338.03	2,012.45	2,493,410.82	182,466.07
Morrow	1,028,711.11	575,297.72		453,413.39	
Multnomah	1,450,939.44	844,502.57		593,283.59	13,153.28
Polk	1,170,028.58	488,671.74	15,382.35	665,974.49	
Sherman	801,849.50	525,890.50		275,959.00	
Tillamook	504,531.12	391,800.33		112,730.79	
Umatilla	2,580,623.80	1,526,788.73	142,939.72	910,895.35	
Union	1,699,546.71	1,096,816.26	12,559.22	551,531.10	38,640.13
Wallowa	1,154,609.27	753,357.37		401,251.90	
Wasco	1,923,278.24	1,354,851.61	8,889.33	559,537.30	
Washington	1,449,768.98	809,194.82		592,870.17	47,703.99
Wheeler	282,632.99	148,593.99	5,000.00	129,039.00	
Yamhill	2,926,556.88	1,782,335.21	5,012.92	1,132,492.75	6,716.00
Totals	$ 65,719,739.91	$ 39,152,687.69	$ 829,155.04	$ 25,075,869.15	$ 662,028.03
Construction	$ 57,039,652.78	$ 30,547,882.28	$ 827,371.67	$ 25,005,596.82	$ 658,802.01
Minor Betterment	2,789,696.26	2,785,696.06	774.18		3,226.02
Surveys	2,235,805.96	2,182,695.42	1,009.19	52,101.35	
Rights of Way	2,954,757.76	2,936,586.78		18,170.98	
Forest Roads	699,827.15	699,827.15			
Totals	$ 65,719,739.91	$ 39,152,687.69	$ 829,155.04	$ 25,075,869.15	$ 662,028.03

Table No. 16

SECONDARY STATE HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

Years 1917 to June 30, 1958, Inclusive

This table gives the totals of expenditures made for secondary state highway maintenance work in each of the several counties during the 42-year period ending June 30, 1958. It includes expenditures for contract maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 888,774.15	$ 888,740.42	$ 33.73	$	$
Benton	699,188.06	699,188.06			
Clackamas	2,754,084.05	2,754,084.05			
Clatsop	1,500,350.63	1,494,433.38		5,917.25	
Columbia	1,258,573.11	1,258,573.11			
Coos	2,104,894.64	2,104,894.64			
Crook	938,141.82	938,141.82			
Curry	52,559.31	52,559.31			
Deschutes	577,446.54	577,446.54			
Douglas	1,863,556.38	1,863,556.38			
Gilliam	321,167.09	321,167.09			
Grant	262,525.80	262,525.80			
Harney	651,344.72	651,344.72			
Hood River	410,335.39	410,335.39			
Jackson	1,309,624.27	1,304,811.15	275.14	4,537.98	
Jefferson	251,101.13	251,101.13			
Josephine	654,925.25	653,473.28		1,451.97	
Klamath	1,898,055.02	1,894,651.85		3,403.17	
Lake	445,000.08	445,000.08			
Lane	2,599,514.26	2,599,406.26	108.00		
Lincoln	827,714.77	827,714.77			
Linn	2,120,234.21	2,119,783.93	450.28		
Malheur	2,381,787.15	2,381,787.15			
Marion	2,213,849.07	2,213,849.07			
Morrow	884,042.80	884,042.80			
Multnomah	1,502,586.86	1,489,119.31			13,467.55
Polk	1,296,163.69	1,296,146.75	16.94		
Sherman	260,764.31	260,764.31			
Tillamook	472,453.45	472,453.45			
Umatilla	2,154,639.46	2,149,554.81	3,071.83	2,012.82	
Union	1,629,697.07	1,629,697.07			
Wallowa	425,162.98	425,162.98			
Wasco	235,613.57	235,613.57			
Washington	1,773,478.01	1,773,478.01			
Wheeler	452,104.99	452,104.99			
Yamhill	1,821,671.30	1,821,671.30			
Maintenance Supervision	1,034,432.04	1,034,432.04			
Undistributed	7,646.33	7,646.33			
Totals	$ 42,935,203.76	$ 42,900,457.10	$ 3,955.92	$ 17,323.19	$ 13,467.55
General Maintenance	$ 39,412,857.08	$ 39,407,485.29	$ 1,968.62	$ 3,403.17	$
Contract Maintenance	2,480,268.31	2,450,893.44	1,987.30	13,920.02	13,467.55
Maintenance Supervision	1,034,432.04	1,034,432.04			
Undistributed	7,646.33	7,646.33			
Totals	$ 42,935,203.76	$ 42,900,457.10	$ 3,955.92	$ 17,323.19	$ 13,467.55

Table No. 17

LOCAL ROAD AND STREET CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1958

This table gives the totals of the expenditures made for construction of roads and streets that are not on the state highway system. It includes expenditures for construction, minor betterments, surveys, rights of way, and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 567,759.32	$ 222,870.98	$ 81,555.22	$ 263,333.12	$
Benton	770,889.88	358,744.49	71,934.56	340,210.83	
Clackamas	1,378,697.25	470,229.05	200,458.72	699,476.35	8,533.13
Clatsop	595,115.10	252,854.51	75,353.21	246,468.88	20,438.50
Columbia	1,313,705.30	720,579.38	64,739.21	520,331.72	8,054.99
Coos	1,870,706.53	518,616.82	436,680.07	914,094.54	1,315.10
Crook	531,849.89	224,924.10	72,488.86	228,842.70	5,594.23
Curry	335,135.92	180,546.04	49,692.25	70,862.00	34,035.63
Deschutes	683,113.06	303,075.58	117,683.48	261,704.00	650.00
Douglas	3,374,551.81	1,915,229.62	201,975.09	1,241,828.33	15,518.77
Gilliam	248,393.22	89,218.79	49,667.80	104,042.00	5,464.63
Grant	325,455.89	173,078.53	43,192.86	109,137.03	47.47
Harney	281,133.06	103,266.88	25,657.18	149,032.00	3,177.00
Hood River	405,473.33	161,304.61	61,053.72	183,115.00	
Jackson	1,329,942.92	475,452.58	164,511.88	686,978.46	3,000.00
Jefferson	357,717.82	128,976.52	57,603.39	167,078.73	4,059.18
Josephine	753,205.63	333,127.24	120,284.39	299,794.00	
Klamath	1,366,506.99	625,421.19	83,781.36	650,509.40	6,795.04
Lake	615,082.75	217,198.25	100,639.82	296,219.00	1,025.68
Lane	3,187,004.73	736,531.76	1,254,113.72	704,057.61	492,301.64
Lincoln	748,850.57	363,583.77	91,748.69	285,447.07	8,071.04
Linn	1,313,834.97	553,283.07	173,104.70	522,503.00	64,944.20
Malheur	851,450.99	317,019.38	115,537.13	417,493.00	1,401.48
Marion	2,586,123.69	1,213,467.16	389,550.37	961,634.38	21,471.78
Morrow	368,574.35	127,829.57	68,413.22	169,155.00	3,176.56
Multnomah	3,591,556.22	883,363.39	275,670.75	2,426,349.52	6,172.56
Polk	1,222,778.82	584,184.73	317,521.59	298,936.76	22,135.74
Sherman	394,052.14	148,961.96	34,797.76	210,292.42	
Tillamook	875,862.99	401,506.24	109,782.47	322,309.98	42,264.30
Umatilla	1,852,544.64	970,999.67	170,801.35	681,454.05	29,289.57
Union	853,757.57	383,955.51	84,816.38	373,727.45	11,258.23
Wallowa	432,937.84	205,929.43	70,331.07	189,931.08	16,746.26
Wasco	836,293.69	347,383.68	81,141.41	407,768.60	
Washington	1,462,404.19	692,287.51	113,935.78	647,976.23	8,204.67
Wheeler	357,966.19	145,030.64	39,372.55	173,563.00	
Yamhill	1,110,459.03	515,180.29	108,140.79	442,413.70	44,724.25
Totals	$ 39,200,888.29	$ 16,065,212.92	$ 5,577,732.80	$ 16,668,070.94	$ 889,871.63
Construction	$ 34,437,250.73	$ 11,712,377.51	$ 5,573,444.81	$ 16,606,580.15	$ 544,848.26
City Allotment	2,784,341.35	2,439,317.98			345,023.37
Forest Roads	113,675.60	113,675.60			
Minor Betterment	98,440.88	98,440.88			
Surveys	1,587,546.87	1,555,724.45	4,287.99	27,534.43	
Rights of Way	179,632.86	145,676.50		33,956.36	
Totals	$ 39,200,888.29	$ 16,065,212.92	$ 5,577,732.80	$ 16,668,070.94	$ 889,871.63

Table No. 18

LOCAL ROAD AND STREET MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

Years 1917 to June 30, 1958, Inclusive

This table gives the total expenditures for maintenance work on roads and streets that are not on the state highway system. It includes expenditures for maintenance of county road signs; prior maintenance of sections of state highways which have been abandoned and maintenance of local city streets during 1941-1947.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 119,758.03	$ 119,198.14	$ 559.89	$ .....
Benton	41,961.98	41,961.98	.....	.....
Clackamas	142,552.91	142,552.91	.....	.....
Clatsop	33,683.57	33,683.57	.....	.....
Columbia	18,002.06	18,002.06	.....	.....
Coos	22,515.25	20,202.23	.....	2,313.02
Crook	4,506.04	4,506.04	.....	.....
Curry	1,303.74	1,303.74	.....	.....
Deschutes	14,038.26	14,038.26	.....	.....
Douglas	48,747.76	48,105.37	642.39	.....
Gilliam	3,684.21	3,684.21	.....	.....
Grant	5,511.51	5,511.51	.....	.....
Harney	6,808.37	6,808.37	.....	.....
Hood River	15,325.86	15,325.86	.....	.....
Jackson	84,037.02	84,037.02	.....	.....
Jefferson	9,172.37	9,172.37	.....	.....
Josephine	45,840.46	45,840.46	.....	.....
Klamath	90,927.20	90,927.20	.....	.....
Lake	16,343.28	16,343.28	.....	.....
Lane	159,233.77	159,233.77	.....	.....
Lincoln	7,832.03	7,832.03	.....	.....
Linn	194,441.30	193,144.66	1,296.64	.....
Malheur	14,893.32	14,893.32	.....	.....
Marion	116,072.00	116,072.00	.....	.....
Morrow	6,948.89	6,948.89	.....	.....
Multnomah	101,787.38	101,787.38	.....	.....
Polk	107,056.26	107,056.26	.....	.....
Sherman	4,124.98	4,124.98	.....	.....
Tillamook	9,338.55	5,913.42	.....	3,425.13
Umatilla	59,482.71	59,386.75	28.49	67.47
Union	14,043.88	14,043.88	.....	.....
Wallowa	12,499.89	12,499.89	.....	.....
Wasco	14,840.18	14,840.18	.....	.....
Washington	40,176.97	40,176.97	.....	.....
Wheeler	1,874.53	1,874.53	.....	.....
Yamhill	25,573.78	25,573.78	.....	.....
Maintenance Supervision	2,195.70	2,195.70	.....	.....
Totals	$ 1,617,136.00	$ 1,608,802.97	$ 2,527.41	$ 5,805.62

General Maintenance	$ 1,232,934.08	$ 1,228,093.65	$ 2,527.41	$ 2,313.02
Contract Maintenance	15,137.58	15,070.11	.....	67.47
City Street Maintenance	366,868.64	363,443.51	.....	3,425.13
Maintenance Supervision	2,195.70	2,195.70	.....	.....
Totals	$ 1,617,136.00	$ 1,608,802.97	$ 2,527.41	$ 5,805.62

Table No. 19

FOREST HIGHWAY EXPENDITURES OF STATE HIGHWAY ROUTES CLASSIFIED BY COUNTIES

Years 1917 to 1957, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the Bureau of Public Roads, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15, and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by highways see table No. 20.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 488,708.40	$ 44,845.60	$ 584.00	$ 443,278.80
Clackamas	3,602,629.42	525,124.95	.....	3,077,504.47
Coos	1,772,567.59	9,472.03	83,000.00	1,680,095.56
Crook	1,434,549.74	113,488.86	26,875.00	1,294,185.88
Curry	2,665,286.93	118,355.38	30,000.00	2,516,931.55
Deschutes	364,154.83	144,378.47	5,000.00	214,776.36
Douglas	6,329,134.59	1,846,298.62	275,054.98	4,207,780.99
Grant	3,530,006.47	159,639.74	250,046.25	3,120,320.48
Harney	1,663,490.81	.....	65,000.00	1,598,490.81
Hood River	784,041.25	314,844.19	.....	469,197.06
Jackson	1,399,717.10	296,095.20	3,438.81	1,100,183.09
Jefferson	350,725.39	56,000.00	13,000.00	281,725.39
Josephine	931,070.32	308,361.06	17,522.99	605,186.27
Klamath	1,059,276.67	209,114.95	179,954.97	670,206.75
Lake	1,214,815.93	227,455.92	.....	987,360.01
Lane	8,383,710.00	1,488,575.43	312,500.00	6,582,634.57
Lincoln	4,229,665.98	889,652.93	315,000.00	3,025,013.05
Linn	2,790,387.62	.....	202,014.00	2,588,373.62
Marion	6,216,162.70	476,493.82	173,586.00	*5,566,082.88
Morrow	144,363.21	.....	75,000.00	69,363.21
Multnomah	1,677,379.42	52,500.00	.....	1,624,879.42
Tillamook	1,765,652.86	332,115.59	18,624.69	1,414,912.58
Umatilla	1,351,835.09	155,287.23	145,718.32	1,050,829.54
Union	635,113.23	.....	.....	635,113.23
Wallowa	1,650,635.64	67,951.65	39,210.35	1,543,473.64
Wasco	918,509.96	180,844.08	25,000.00	712,665.88
Wheeler	1,179,046.99	105,060.12	29,900.00	1,044,086.87
Totals	$58,532,638.14	$ 8,121,955.82	$ 2,286,030.36	$48,124,651.96

* Includes $4,073,611.60 War Department funds expended on the North Santiam Highway.

Table No. 20

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY HIGHWAYS

Years 1917 to 1957, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the Bureau of Public Roads, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by counties see table No. 19.

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures		
			By State	By County	By Federal Government
1.	Pacific	$ 2,671,380.52	$ 1,463,776.86	$ 23,000.00	$ 1,184,603.66
2.	Columbia River	1,934,828.37	117,500.00		1,817,328.37
4.	The Dalles-California	648,505.02	178,806.28	149,592.81	320,105.93
5.	John Day	1,458,666.28	174,485.34	162,110.76	1,122,070.18
9.	Oregon Coast	7,966,205.37	1,084,415.75	233,000.00	6,648,789.62
11.	Enterprise-Lewiston	1,530,673.72	67,951.65	39,210.35	1,423,511.72
15.	McKenzie	903,228.73	429,278.06	20,000.00	453,950.67
16.	Santiam	2,133,278.05	56,000.00	131,000.00	1,946,278.05
18.	Willamette	4,548,131.80	196,000.00	37,500.00	4,314,631.80
19.	Fremont	357,494.37	879.37		356,615.00
20.	Klamath Falls-Lakeview	913,390.38	226,919.50		686,470.88
22.	Crater Lake	691,486.47	301,060.92	26,300.97	364,124.58
25.	Redwood	620,336.68	144,048.79	9,522.99	466,764.90
26.	Mt. Hood	3,116,379.72	566,436.42		2,549,943.30
27.	Alsea	2,014,555.85	410,818.40	165,000.00	1,438,737.45
28.	Pendleton-John Day	1,977,862.40	185,287.23	202,218.32	1,590,356.85
32.	Three Rivers	423,943.55	149,528.51	18,624.69	255,790.35
34.	Siuslaw	1,999,072.69	708,521.94	260,000.00	1,030,550.75
38.	Oregon Caves	310,733.64	164,312.27	8,000.00	138,421.37
39.	Salmon River	1,034,305.79	180,000.00		854,305.79
41.	Ochoco	2,254,356.81	218,548.98	31,775.00	2,004,032.83
44.	Wapinitia	772,332.88	281,376.80	25,000.00	465,956.08
45.	Umpqua	1,351,861.25	2,500.00	128,001.65	1,221,359.60
48.	John Day-Burns	3,242,012.74		97,019.49	3,144,993.25
53.	Warm Springs	380,456.69			380,456.69
162.	North Santiam	7,069,331.92	476,493.82	257,600.00	*6,335,238.10
173.	Timberline	778,562.39	108,000.00		670,562.39
181.	Siletz	147,634.94		30,000.00	117,634.94
215.	Clear Lake-Belknap Springs	669,688.44			669,688.44
230.	Tiller-Trail	1,967,223.82	223,333.33	124,053.33	1,619,837.16
232.	Crater Lake-North	70,669.32			70,669.32
233.	West Diamond Lake	683,325.68			683,325.68
321.	Heppner-Spray	503,603.13		100,000.00	403,603.13
330.	Weston-Elgin	583,383.78			583,383.78
341.	Ukiah-Hilgard	407,228.80			407,228.80
350.	Little Sheep Creek	119,961.92			119,961.92
421.	Klamath Lake	7,683.46			7,683.46
424.	Sand Creek	53,314.04			53,314.04
425.	East Diamond Lake	209,871.13		7,500.00	202,371.13
	Cascade Lakes (State Cooperation)	5,675.60	5,675.60		
	Totals	$58,532,638.14	$ 8,121,955.82	$ 2,286,030.36	$48,124,651.96

* Includes $4,073,611.60 War Department funds expended on Niagara-Detroit Project.

Table No. 21

STATISTICS PERTAINING TO FOREST HIGHWAY WORK ON STATE HIGHWAYS

The statistics given here apply to highway work in the State of Oregon performed under the supervision of the Bureau of Public Roads. All the work included is upon state highways at points where these highways are in or adjacent to National Forests. The work is financed under cooperative agreements between the federal government, the state, and the counties of the state, the federal funds being Oregon's proportionate share of funds annually appropriated by Congress for forest road work.

The amounts of county and federal government expenditures given here, and the mileages of work performed, are as reported by the Bureau of Public Roads. The amounts of state expenditures are as shown by the disbursement records of the State Highway Commission.

EXPENDITURES ON FOREST HIGHWAY WORK BY YEARS

Year	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
1918-1919-1920	$ 1,568,432.01	$ 809,261.58	$ 102,271.45	$ 656,898.98
1921-1922	1,630,589.13	724,970.53	67,142.21	838,476.39
1923-1924	3,788,011.33	1,092,660.31	725,942.05	1,969,408.97
1925-1926	2,068,546.50	759,762.58	481,431.18	827,352.74
1927-1928	1,404,682.06	250,943.85	245,875.15	907,863.06
1929-1930	2,144,897.80	778,986.98	150,050.00	1,215,860.82
1931-1932	3,898,040.00	856,085.58	299,474.39	2,742,480.03
1933-1934	3,981,315.25	167,330.80	210,586.74	3,603,397.71
1935-1936	2,264,461.55	257,501.65	Cr. 2,842.81	2,009,802.71
1937-1938	2,457,832.51	87,500.00	6,100.00	2,364,232.51
1939-1940	1,687,958.53	35,000.00	.....	1,652,958.53
1941-1942	842,584.72	285,500.00	.....	557,084.72
1943	16,504.44	Cr. 36,824.40	.....	53,328.84
1944	37,824.46	.....	.....	37,824.46
1945	116,994.79	.....	.....	116,994.79
1946	177,609.00	100,000.00	.....	77,609.00
1947	1,541,974.44	200,000.00	.....	1,341,974.44
1948	3,875,893.07	190,000.00	.....	3,685,893.07
1949	4,775,116.61	150,000.00	.....	4,625,116.61
1950	3,496,347.95	1,281,000.00	.....	2,215,347.95
1951	2,273,656.10	75,000.00	.....	2,198,656.10
1952	2,700,531.29	26,493.82	.....	2,674,037.47
1953	2,101,536.53	20,364.65	.....	2,081,171.88
1954	2,057,931.95	1,813.96	.....	2,056,117.99
1955	2,404,129.02	2,141.85	.....	2,401,987.17
1956	2,133,711.17	.....	.....	2,133,711.17
1957	3,085,525.93	6,462.08	.....	3,079,063.85
Totals	$58,532,638.14	$ 8,121,955.82	$ 2,286,030.36	*$48,124,651.96

* Includes $4,073,611.60 War Department funds expended on the North Santiam Highway, $419,239.79 in 1947, $2,529,644.72 in 1948, $599,266.37 in 1949, $186,008.90 in 1950, $281,299.92 in 1951, $58,553.99 in 1952, Cr. $402.09 in 1953.

Table No. 21—Continued

MILEAGES OF FOREST HIGHWAY WORK COMPLETED ON STATE HIGHWAY SYSTEM

Year	Concrete Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Unoiled Surfacing (Miles)	Graded Only (Miles)
1918-1919	.....	.....	.....	.....	67.20
1920-1921	.....	.....	.....	60.83	76.78
1922	.....	.....	.....	22.37	15.69
1923	.....	.....	.....	87.92	61.00
1924	.....	.....	.....	74.62	153.37
1925	.....	.....	.....	99.94	50.70
1926	.....	.....	.....	41.41	52.32
1927	.....	.....	.....	53.50	39.80
1928	.....	.....	.....	17.60	23.80
1929	.....	.....	.....	6.00	19.00
1930	.....	.....	.....	25.88	30.35
1931	.....	.....	.....	21.35	61.29
1932	.....	.....	.....	28.36	14.61
1933	.....	24.94	.....	74.31	28.33
1934	.....	24.65	53.51	18.08	19.65
1935	.....	.....	30.71	.....	8.38
1936	.....	.....	.....	43.59	41.84
1937	0.18	37.26	23.22	41.73	17.85
1938	.....	8.36	7.10	23.31	23.04
1939	.....	16.89	20.69	37.78	8.55
1940	.....	6.07	40.34	46.41	27.58
1941	.....	.....	.....	7.63	.....
1942	.....	5.21	3.87	16.72	13.03
1943	.....	5.24	.....	5.24	5.24
1944	.....	.....	.....	.....	.....
1945	.....	0.29	.....	0.29	0.29
1946	.....	.....	.....	.....	.....
1947	.....	.....	.....	.....	6.42
1948	.....	17.51	.....	17.51	5.08
1949	.....	.....	13.49	13.49	32.77
1950	.....	49.65	14.07	42.62	17.42
1951	.....	28.71	20.62	42.86	6.47
1952	.....	11.52	12.21	23.37	19.71
1953	.....	47.80	.....	47.80	13.47
1954	.....	11.04	3.54	15.81	7.37
1955	.....	30.04	.....	8.35	17.86
1956	.....	7.94	3.42	11.87	18.49
1957	.....	21.59	.....	13.14	25.25
Totals	0.18	354.71	246.79	1,091.69	1,030.00

Table No. 22

COUNTY DISBURSEMENTS FOR ROAD PURPOSES
1951 to 1955 Inclusive

County disbursements as shown below include cooperative payments which constitute the county's share in the cost of projects handled under the direct supervision of the State Highway Commission.

County	1951	1952	1953	1954	1955
Baker	$ 229,371	$ 176,214	$ 200,452	$ 234,311	$ 220,396
Benton	268,769	318,389	310,267	329,051	380,681
Clackamas	629,467	827,634	973,875	1,257,622	1,517,348
Clatsop	409,581	247,196	264,450	212,054	275,836
Columbia	209,004	369,366	427,743	314,030	304,185
Coos	514,907	548,553	922,733	696,341	870,849
Crook	104,831	139,661	173,055	215,234	196,981
Curry	74,872	84,921	179,342	137,556	126,233
Deschutes	191,227	245,571	292,216	316,484	359,916
Douglas	1,469,342	1,704,008	2,273,542	2,676,960	2,370,380
Gilliam	91,522	63,933	152,673	103,137	91,878
Grant	148,353	302,422	294,622	353,649	240,019
Harney	117,360	147,806	222,531	229,544	185,590
Hood River	154,333	157,358	184,006	186,438	188,659
Jackson	772,416	920,257	1,003,796	1,327,679	1,362,210
Jefferson	104,637	110,213	109,010	130,402	166,881
Josephine	327,400	408,425	567,869	613,776	679,200
Klamath	533,859	721,452	507,102	874,219	903,419
Lake	137,024	193,468	315,193	197,100	229,053
Lane	1,495,428	1,501,345	2,152,658	2,332,970	1,964,661
Lincoln	245,098	237,599	261,520	300,112	346,358
Linn	530,373	702,818	1,017,636	898,013	1,049,893
Malheur	356,665	363,103	295,248	222,882	221,155
Marion	713,757	767,002	893,079	695,868	762,922
Morrow	211,517	193,126	222,902	212,496	205,207
Multnomah	2,614,646	3,101,173	3,280,484	3,150,417	5,036,378
Polk	386,810	316,004	253,034	370,007	408,970
Sherman	75,520	113,808	119,226	109,912	127,627
Tillamook	288,386	291,608	507,667	633,562	540,732
Umatilla	493,823	444,469	880,910	1,691,079	3,021,972
Union	203,984	232,589	320,624	319,885	325,562
Wallowa	168,788	154,276	171,667	181,877	200,559
Wasco	1,242,619	2,332,532	2,627,925	2,543,271	591,961
Washington	647,352	783,823	750,397	884,096	795,503
Wheeler	68,909	62,759	59,064	60,580	83,610
Yamhill	336,567	366,036	385,631	503,650	532,034
Totals	$16,568,517	$19,650,917	$23,574,149	$25,516,264	$26,884,818

Table No. 23

COUNTY BOND AND WARRANT INDEBTEDNESS IN CONNECTION WITH ROADS AND BRIDGES

June 30, 1958

The information contained in this table was compiled by the State Treasurer.

County	Bonds Outstanding	Road Warrants Outstanding	Total Road and Bridge Debt	Sinking Fund or Cash on Hand	Net Road and Bridge Debt
Baker	$	$	$	$	$
Benton					
Clackamas					
Clatsop					
Columbia					
Coos	234,000.00		234,000.00		234,000.00
Crook					
Curry					
Deschutes					
Douglas					
Gilliam					
Grant					
Harney					
Hood River					
Jackson					
Jefferson					
Josephine					
Klamath					
Lake					
Lane					
Lincoln					
Linn					
Malheur					
Marion					
Morrow					
Multnomah	13,972,000.00		13,972,000.00	1,110,285.97	12,861,714.03
Polk					
Sherman					
Tillamook					
Umatilla	4,953,000.00		4,953,000.00		4,953,000.00
Union					
Wallowa					
Wasco	2,720,000.00		2,720,000.00	242,086.06	2,477,913.94
Washington					
Wheeler					
Yamhill					
Totals	$21,879,000.00	$	$21,879,000.00	$ 1,352,372.03	$20,526,627.97

Table No. 24

STATE HIGHWAY BOND INDEBTEDNESS ACCOUNT

Issues Prior to 1951

Calendar Year	Annual Principal	Annual Interest	Annual Total	Bonds Outstanding at End of Year
1917	$	$ 5,000.00	$ 5,000.00	$ 1,400,000.00
1918		72,900.00	72,900.00	2,840,000.00
1919		141,099.99	141,099.99	10,140,000.00
1920		503,725.00	503,725.00	19,140,000.00
1921		974,870.83	974,870.83	30,700,000.00
1922	125,000.00	1,521,266.67	1,646,266.67	36,075,000.00
1923	179,750.00	1,742,150.00	1,921,900.00	38,395,250.00
1924	334,500.00	1,824,240.00	2,158,740.00	38,060,750.00
1925	3,797,000.00	1,799,267.05	5,596,267.05	37,263,750.00
1926	1,197,000.00	1,722,761.65	2,919,761.65	36,066,750.00
1927	1,600,000.00	1,663,215.87	3,263,215.87	34,466,750.00
1928	1,750,000.00	1,586,060.99	3,336,060.99	32,716,750.00
1929	1,825,000.00	1,503,578.47	3,328,578.47	30,891,750.00
1930	1,925,000.00	1,418,314.70	3,343,314.70	30,466,750.00
1931	1,975,000.00	1,386,522.18	3,361,522.18	29,491,750.00
1932	2,975,000.00	1,369,435.06	4,344,435.06	27,516,750.00
1933	1,975,000.00	1,290,992.54	3,265,992.54	27,041,750.00
1934*	2,175,000.00	1,250,010.02	3,425,010.02	25,866,750.00
1935*	5,675,000.00	1,225,541.73**	6,900,541.73	25,691,750.00
1936*	2,950,000.00	1,089,213.37	4,039,213.37	23,441,750.00
1937***	2,800,000.00	984,228.06	3,784,228.06	21,641,750.00
1938***	3,550,000.00	877,764.27	4,427,764.27	18,841,750.00
1939	2,000,000.00	776,394.23	2,776,394.23	16,841,750.00
1940	2,075,000.00	683,724.19	2,758,724.19	14,766,750.00
1941	2,150,000.00	589,085.40	2,739,085.40	12,616,750.00
1942	2,125,000.00	493,790.36	2,618,790.36	10,491,750.00
1943	2,070,250.00	399,995.32	2,470,245.32	8,421,500.00
1944	1,915,500.00	308,610.28	2,224,110.28	6,506,000.00
1945	1,453,000.00	227,913.99	1,680,913.99	5,053,000.00
1946	1,053,000.00	166,998.95	1,219,998.95	4,000,000.00
1947	650,000.00	126,765.80	776,765.80	3,350,000.00
1948	500,000.00	104,109.53	604,109.53	2,850,000.00
1949	425,000.00	86,797.01	511,797.01	2,425,000.00
1950	325,000.00	72,171.99	397,171.99	2,100,000.00
1951	275,000.00	62,046.97	337,046.97	1,825,000.00
1952	275,000.00	52,984.45	327,984.45	1,550,000.00
1953	275,000.00	43,921.93	318,921.93	1,275,000.00
1954	275,000.00	34,859.41	309,859.41	1,000,000.00
1955	275,000.00	25,796.89	300,796.89	725,000.00
1956	200,000.00	17,531.25	217,531.25	525,000.00
1957	150,000.00	12,187.50	162,187.50	375,000.00
1958	150,000.00	8,437.50	158,437.50	225,000.00
1959	150,000.00	4,687.50	154,687.50	75,000.00
1960	75,000.00	937.50	75,937.50	
Totals	$55,650,000.00	$30,251,906.40	$85,901,906.40	

* Includes Coast Bridge short-term bonds.

** Includes $4,866.50 refund to cover accrued interest paid in by Ladd & Bush, Bankers, on Coast Bridge bonds.

*** Includes retirement of 1937 and 1938 short-term bonds.

Table No. 25

STATE HIGHWAY BOND INDEBTEDNESS ACCOUNT
$92,600,000 Bonds Sold in 1951, 1952, 1953, and 1957

Calendar Year	Principal Payment	Interest Payment	Total Payment	Bonds Outstanding at End of Year
1951	$	$	$	$15,000,000.00
1952	750,000.00	318,750.00	1,068,750.00	29,250,000.00
1953	1,500,000.00	502,812.50	2,002,812.50	69,750,000.00
1954	4,000,000.00	1,220,937.50	5,220,937.50	65,750,000.00
1955	4,000,000.00	1,165,312.50	5,165,312.50	61,750,000.00
1956	4,000,000.00	1,102,812.50	5,102,812.50	57,750,000.00
1957	4,000,000.00	1,040,312.50	5,040,312.50	74,350,000.00
1958	4,000,000.00	1,585,812.50	5,585,812.50	70,350,000.00
1959	4,000,000.00	1,517,375.00	5,517,375.00	66,350,000.00
1960	5,000,000.00	1,448,000.00	6,448,000.00	61,350,000.00
1961	6,000,000.00	1,349,250.00	7,349,250.00	55,350,000.00
1962	6,000,000.00	1,230,500.00	7,230,500.00	49,350,000.00
1963	6,000,000.00	1,109,250.00	7,109,250.00	43,350,000.00
1964	6,000,000.00	980,500.00	6,980,500.00	37,350,000.00
1965	6,500,000.00	851,750.00	7,351,750.00	30,850,000.00
1966	6,500,000.00	708,000.00	7,208,000.00	24,350,000.00
1967	3,500,000.00	564,250.00	4,064,250.00	20,850,000.00
1968	3,500,000.00	487,375.00	3,987,375.00	17,350,000.00
1969	3,600,000.00	409,875.00	4,009,875.00	13,750,000.00
1970	3,600,000.00	329,375.00	3,929,375.00	10,150,000.00
1971	3,600,000.00	247,937.50	3,847,937.50	6,550,000.00
1972	2,850,000.00	165,562.50	3,015,562.50	3,700,000.00
1973	2,100,000.00	101,000.00	2,201,000.00	1,600,000.00
1974	1,600,000.00	48,000.00	1,648,000.00	
Totals	$92,600,000.00	$18,484,750.00	$111,084,750.00	

DETAIL OF BOND SALES

Date of Issue	Par Value	Term in Years	Effective Interest Rate	Total Interest
October 1, 1951	$15,000,000.00	20	1.6152000%	$ 2,295,000.00
March 1, 1952	15,000,000.00	20	1.6347610%	2,396,250.00
March 1, 1953	10,000,000.00	20	1.9928095%	1,965,000.00
September 1, 1953	32,000,000.00	13	2.3202280%	5,210,000.00
November 1, 1957	20,600,000.00	17	3.1726100%	6,618,500.00
	$92,600,000.00			$18,484,750.00

BOND SALE AUTHORITY AND BONDS OUTSTANDING

December 31, 1958

Authority	Date of Issue	Sold (Par Value)	Matured	Balance Outstanding
ORS 366.645-670	October 1, 1951	$15,000,000.00	$ 5,250,000.00	$ 9,750,000.00
ORS 366.645-670	March 1, 1952	15,000,000.00	4,500,000.00	10,500,000.00
ORS 366.645-670	March 1, 1953	10,000,000.00	2,500,000.00	7,500,000.00
ORS 366.688-697	September 1, 1953	32,000,000.00	10,000,000.00	22,000,000.00
ORS 286.040	November 1, 1957	8,000,000.00		8,000,000.00
ORS 286.040	November 1, 1957	12,600,000.00		12,600,000.00
Total Sold		$92,600,000.00		
Total matured and paid			$22,250,000.00	
Total outstanding				$70,350,000.00

Table No. 26

APPORTIONMENT OF MOTOR VEHICLE REVENUES TO CITIES—1944 TO 1958, INCLUSIVE

Beginning with the calendar year 1944, the cities have annually received a portion of the state highway income from motor vehicle fees, motor transportation fees, gasoline tax, and fines for traffic law violations. During the years 1944 to 1947, the cities received five (5) per cent of the state highway income, and beginning with the year 1948 they have received ten (10) per cent of the income. The apportionments are made semi-annually, on February first and August first, and are distributed in proportion to population, with the provision that a city of over 100,000 population receives an apportionment computed on two-thirds of its population. Payments are made only to incorporated cities having functioning city governments.

City	County	Total 1944 to 1956	1957	1958	Total 1944 to 1958
Adams	Umatilla	$ 9,758.36	$ 1,321.83	$ 1,294.64	$ 12,374.83
Albany	Linn	513,120.05	81,407.33	80,836.17	675,363.55
Amity	Yamhill	38,797.54	4,181.98	4,010.23	46,989.75
Antelope	Wasco	4,308.43	390.04	378.92	5,077.39
Arlington	Gilliam	39,534.42	4,420.47	4,294.42	48,249.31
Ashland	Jackson	399,808.19	56,329.79	55,259.10	511,397.08
Astoria	Clatsop	697,977.57	80,160.04	77,874.28	856,011.89
Athena	Umatilla	44,127.51	5,610.09	5,450.13	55,187.73
Aumsville	Marion	15,691.74	1,950.21	1,894.60	19,536.55
Aurora	Marion	14,480.24	1,483.09	1,528.31	17,491.64
Baker	Baker	567,800.57	61,840.61	60,178.73	689,819.91
Bandon	Coos	70,507.73	10,527.98	10,420.29	91,456.00
Banks	Washington	20,791.04	2,424.76	2,355.61	25,571.41
Barlow	Clackamas	4,052.52	635.65	631.54	5,319.71
Bay City	Tillamook	40,258.34	5,382.58	5,229.09	50,870.01
Beaverton	Washington	140,207.13	26,582.29	26,524.37	193,313.79
Bend	Deschutes	657,136.56	79,276.21	78,625.80	815,038.57
Boardman	Morrow	6,992.12	813.44	846.25	8,651.81
Bonanza	Klamath	15,014.30	1,683.68	1,635.67	18,333.65
Brookings	Curry	62,516.31	20,453.47	20,524.81	103,494.59
Brownsville	Linn	65,425.41	7,688.83	7,452.08	80,566.32
Burns	Harney	175,438.91	23,139.47	22,735.17	221,313.55
Butte Falls	Jackson	21,641.41	2,353.25	2,286.15	26,280.81
Canby	Clackamas	93,556.61	13,466.51	13,369.55	120,392.67
Cannon Beach	Clatsop	1,507.10	3,354.36	3,258.71	8,120.17
Canyon City	Grant	26,487.08	4,173.45	4,054.44	34,714.97
Canyonville	Douglas	51,086.70	7,655.95	7,262.62	66,005.27
Carlton	Yamhill	62,176.29	6,937.42	6,631.09	75,744.80
Cascade Locks	Hood River	43,672.06	5,182.54	5,052.26	53,906.86
Cave Junction	Josephine	15,230.73	1,950.21	1,894.60	19,075.54
Central Point	Jackson	91,382.88	13,092.22	12,946.42	117,421.52
Chiloquin	Klamath	45,093.38	5,909.12	5,740.63	56,743.13
Clatskanie	Columbia	52,384.14	5,841.07	5,608.01	63,833.22
Coburg	Lane	38,787.96	4,487.59	4,338.63	47,614.18
Columbia City	Columbia	22,696.32	2,908.23	2,930.31	28,534.86
Condon	Gilliam	56,801.81	6,736.01	7,079.48	70,617.30
Coos Bay	Coos	354,280.14	47,529.40	47,049.18	448,858.72
Coquille	Coos	227,158.63	31,099.21	30,471.45	288,729.29
Cornelius	Washington	56,169.22	7,443.30	7,231.05	70,843.57
Corvallis	Benton	801,660.25	118,100.97	116,833.52	1,036,594.74
Cottage Grove	Lane	193,753.65	26,942.60	26,524.37	247,220.62
Cove	Union	17,945.81	1,950.21	1,894.60	21,790.62
Creswell	Lane	39,249.84	5,027.30	4,925.95	49,203.09
Culver	Jefferson	14,606.33	2,098.69	2,210.36	18,915.38

Table No. 26—Continued

City	County	Total 1944 to 1956	1957	1958	Total 1944 to 1958
Dallas	Polk	261,728.14	34,026.22	33,995.40	329,749.76
Dayton	Yamhill	41,022.50	4,560.99	4,294.42	49,877.91
Dayville	Grant	13,673.12	1,638.25	1,623.04	16,934.41
Delake	Lincoln	28,156.32	5,200.55	5,052.26	38,409.13
Detroit	Marion	7,059.60	1,781.19	1,730.40	10,571.19
Donald	Marion	11,211.71	1,363.74	1,338.85	13,914.30
Drain	Douglas	63,421.14	8,133.68	8,146.77	79,701.59
Draperville	Linn	638.65	.....	.....	638.65
Dufur	Wasco	24,976.61	3,334.30	3,309.23	31,620.14
Dundee	Yamhill	16,285.73	1,979.03	1,894.60	20,159.36
Eagle Point	Jackson	32,085.59	4,247.27	4,490.20	40,823.06
Eastside	Coos	55,766.56	8,802.67	9,157.22	73,726.45
Echo	Umatilla	27,176.95	3,393.36	3,296.60	33,866.91
Elgin	Union	73,794.01	9,090.16	8,841.46	91,725.63
Elkton	Douglas	10,184.38	1,378.15	1,338.85	12,901.38
Empire	Coos	117,330.06	25,162.11	24,787.65	167,279.82
Enterprise	Wallowa	105,843.57	12,728.36	12,365.40	130,937.33
Estacada	Clackamas	49,787.94	5,725.45	5,772.21	61,285.60
Eugene	Lane	1,862,570.82	294,679.44	293,536.34	2,450,786.60
Fairview	Multnomah	25,365.60	2,994.70	2,930.31	31,290.61
Falls City	Polk	48,058.65	5,272.99	5,210.14	58,541.78
Florence	Lane	67,548.31	10,946.99	10,862.36	89,357.66
Forest Grove	Washington	228,298.78	32,955.42	34,159.60	295,413.80
Fossil	Wheeler	37,408.16	4,411.15	4,313.36	46,132.67
Garibaldi	Tillamook	63,386.38	8,119.37	7,887.85	79,393.60
Gaston	Washington	21,344.26	2,399.46	2,324.04	26,067.76
Gates	Marion	17,004.22	2,717.29	2,639.80	22,361.31
Gearhart	Clatsop	33,392.84	3,727.17	3,662.89	40,782.90
Gervais	Marion	25,564.78	3,035.82	2,949.26	31,549.86
Gladstone	Clackamas	145,497.55	23,019.00	22,684.65	191,201.20
Glendale	Douglas	45,619.06	6,500.69	6,315.32	58,435.07
Gold Beach	Curry	51,462.82	11,439.75	11,999.12	74,901.69
Gold Hill	Jackson	37,167.60	4,257.96	4,136.54	45,562.10
Granite	Grant	3,346.55	19.50	18.94	3,384.99
Grants Pass	Josephine	445,049.06	63,943.09	63,064.85	572,057.00
Grass Valley	Sherman	11,965.68	1,279.93	1,250.43	14,496.04
Gresham	Multnomah	175,285.86	22,449.46	21,977.34	219,712.66
Haines	Baker	20,653.42	2,086.65	1,995.65	24,735.72
Halfway	Baker	21,252.37	2,327.78	2,481.92	26,062.07
Halsey	Linn	21,532.05	2,621.27	2,564.03	26,717.35
Hammond	Clatsop	29,123.84	3,380.36	3,283.97	35,788.17
Harrisburg	Linn	50,358.94	5,571.10	5,412.24	61,342.28
Helix	Umatilla	10,616.66	1,183.13	1,149.39	12,949.18
Heppner	Morrow	93,172.98	10,713.14	10,407.66	114,293.78
Hermiston	Umatilla	188,495.18	29,220.61	28,387.39	246,103.18
Hillsboro	Washington	282,649.17	44,953.88	45,988.20	373,591.25
Hines	Harney	51,375.71	7,307.46	7,382.62	66,065.79
Hood River	Hood River	214,398.69	26,472.69	25,892.83	266,764.21
Hubbard	Marion	29,177.26	3,204.84	3,113.46	35,495.56
Huntington	Baker	47,901.71	5,103.65	5,210.14	58,215.50
Idanha	Marion	17,822.87	2,351.73	1,951.43	22,126.03
Imbler	Union	9,742.84	971.50	947.30	11,661.64
Independence	Polk	110,365.50	13,146.27	12,946.42	136,458.19
Ione	Morrow	16,911.06	2,164.73	2,103.00	21,178.79
Irrigon	Morrow	.....	756.28	1,648.30	2,404.58
Island City	Union	9,244.29	964.29	947.30	11,155.88
Jacksonville	Jackson	66,520.57	7,579.81	7,363.67	81,464.05
Jefferson	Marion	37,403.21	4,244.95	4,123.91	45,772.07
John Day	Grant	80,499.72	10,563.63	10,262.41	101,325.76
Jordan Valley	Malheur	15,033.32	1,550.44	1,667.24	18,251.00
Joseph	Wallowa	38,647.85	4,745.51	5,368.03	48,761.39
Junction City	Lane	86,875.93	10,401.11	10,104.52	107,381.56

Table No. 26—Continued

City	County	Total 1944 to 1956	1957	1958	Total 1944 to 1958
Juntura	Malheur	7,384.79	741.16	751.52	8,877.47
Klamath Falls	Klamath	978,017.99	120,991.01	119,991.19	1,219,000.19
Lafayette	Yamhill	36,946.31	3,900.42	3,789.20	44,635.93
La Grande	Union	501,223.42	59,156.30	57,469.47	617,849.19
Lakeview	Lake	162,885.01	20,152.15	19,577.51	202,614.67
Lebanon	Linn	283,024.56	41,929.47	40,733.86	365,687.89
Lexington	Morrow	14,023.25	1,703.96	1,679.87	17,407.08
Lonerock	Gilliam	2,463.48	221.02	214.73	2,899.23
Long Creek	Grant	16,347.73	2,242.74	2,178.79	20,769.26
Lostine	Wallowa	12,461.72	1,690.18	1,641.99	15,793.89
Lowell	Lane	7,668.09	3,759.52	3,631.32	15,058.93
Madras	Jefferson	64,034.34	9,879.45	10,129.78	84,043.57
Malin	Klamath	34,391.19	3,848.41	3,738.67	41,978.27
Manzanita	Tillamook	17,258.52	2,986.79	2,936.62	23,181.93
Maupin	Wasco	18,046.39	2,665.29	2,589.28	23,300.96
McMinnville	Yamhill	333,047.97	45,184.17	44,207.28	422,439.42
Medford	Jackson	929,663.86	140,660.34	148,858.54	1,219,182.74
Merrill	Klamath	45,987.79	5,442.57	6,271.12	57,701.48
Metolius	Jefferson	6,304.56	1,671.13	1,812.50	9,788.19
Mill City	Linn	87,252.68	11,214.60	10,369.77	108,837.05
Milton-Freewater	Umatilla	209,903.78	27,447.78	26,840.13	264,191.69
Milwaukie	Clackamas	306,294.22	38,293.63	39,091.87	383,679.72
Mitchell	Wheeler	20,455.54	2,697.79	2,620.86	25,774.19
Molalla	Clackamas	83,117.49	9,824.01	9,851.91	102,793.41
Monmouth	Polk	98,112.76	15,014.23	14,803.12	127,930.11
Monroe	Benton	20,652.96	2,376.43	2,336.67	25,366.06
Monument	Grant	10,705.30	1,487.95	1,452.53	13,645.78
Moro	Sherman	20,498.50	2,386.54	2,342.99	25,228.03
Mosier	Wasco	14,599.97	1,628.62	1,515.68	17,744.27
Mt. Angel	Marion	78,100.93	9,321.99	9,056.18	96,479.10
Mt. Vernon	Grant	22,408.47	3,087.82	2,999.78	28,496.07
Myrtle Creek	Douglas	92,298.27	16,066.61	15,219.93	123,584.81
Myrtle Point	Coos	113,928.37	20,390.06	20,221.68	154,540.11
Nehalem	Tillamook	16,334.40	1,852.69	1,799.87	19,986.96
Newberg	Yamhill	215,245.63	26,002.77	25,261.31	266,509.71
Newport	Lincoln	181,384.47	29,841.37	30,313.56	241,539.40
North Bend	Coos	335,911.19	48,828.77	47,996.48	432,736.44
North Powder	Union	23,687.15	2,678.28	2,601.91	28,967.34
Nyssa	Malheur	147,355.63	18,187.98	17,872.38	183,415.99
Oakland	Douglas	44,097.00	6,611.21	6,422.69	57,130.90
Oakridge	Lane	82,585.83	13,489.69	13,420.07	109,495.59
Oceanlake	Lincoln	39,339.00	8,665.42	8,418.32	56,422.74
Ontario	Malheur	248,259.58	30,123.73	29,366.26	307,749.57
Oregon City	Clackamas	428,500.87	53,951.49	52,745.60	535,197.96
Oswego	Clackamas	190,507.30	29,706.08	29,492.57	249,705.95
Paisley	Lake	13,399.96	1,438.22	1,446.21	16,284.39
Pendleton	Umatilla	666,027.08	96,213.05	95,828.75	858,068.88
Philomath	Benton	68,340.61	8,971.10	8,778.30	86,090.01
Phoenix	Jackson	42,086.09	5,270.85	4,616.51	51,973.45
Pilot Rock	Umatilla	52,156.32	11,124.00	11,051.82	74,332.14
Portland	Multnomah	14,018,441.76	1,768,613.18	1,735,028.40	17,522,083.34
Port Orford	Curry	50,671.36	8,450.90	8,209.92	67,332.18
Powers	Coos	49,808.11	8,263.54	8,209.92	66,281.57
Prairie City	Grant	46,536.97	5,406.54	5,304.88	57,248.39
Prescott	Columbia	6,336.84	788.07	783.10	7,908.01
Prineville	Crook	177,932.16	24,052.56	23,366.71	225,351.43
Rainier	Columbia	75,091.35	8,469.30	8,367.81	91,928.46
Redmond	Deschutes	160,865.31	23,837.14	23,682.47	208,384.92
Reedsport	Douglas	140,015.00	22,211.96	22,103.64	184,330.60
Richland	Baker	14,046.05	1,589.52	1,736.72	17,372.29
Riddle	Douglas	37,988.74	6,753.21	6,441.63	51,183.58

Table No. 26—Continued

City	County	Total 1944 to 1956	1957	1958	Total 1944 to 1958
Rockaway	Tillamook	60,825.58	7,800.84	7,578.39	76,204.81
Rogue River	Jackson	32,560.61	3,932.85	3,789.20	40,282.66
Roseburg	Douglas	480,383.40	83,067.78	82,099.24	645,550.42
St. Helens	Columbia	275,386.62	33,015.09	32,770.22	341,171.93
St. Paul	Marion	13,437.82	1,742.18	1,692.50	16,872.50
Salem	Marion	2,391,258.42	299,261.43	292,481.68	2,983,001.53
Sandy	Clackamas	52,734.16	8,140.43	7,957.31	68,831.90
Scappoose	Columbia	36,218.15	5,655.91	5,620.64	47,494.70
Scio	Linn	26,228.37	2,972.30	2,905.05	32,105.72
Scotts Mills	Marion	13,119.07	1,009.17	1,029.40	15,157.64
Seaside	Clatsop	211,342.56	25,261.69	24,541.35	261,145.60
Shaniko	Wasco	3,533.40	396.54	385.24	4,315.18
Sheridan	Yamhill	105,599.21	12,195.88	11,487.58	129,282.67
Sherwood	Washington	35,282.30	4,622.92	4,578.61	44,483.83
Siletz	Lincoln	30,978.41	3,792.33	3,789.20	38,559.94
Silver Lake	Lake	133.22	.....	.....	133.22
Silverton	Marion	184,212.25	20,137.25	19,678.56	224,028.06
Sisters	Deschutes	39,142.50	4,550.48	4,420.73	48,113.71
Sodaville	Linn	9,598.08	1,140.52	1,111.50	11,850.10
Spray	Wheeler	.....	.....	596.64	596.64
Springfield	Lane	513,786.18	86,858.58	85,256.90	685,901.66
Stanfield	Umatilla	43,618.03	5,525.58	5,368.03	54,511.64
Stayton	Marion	90,864.10	13,627.22	13,672.68	118,164.00
Sublimity	Marion	20,253.40	2,763.02	2,778.74	25,795.16
Summerville	Union	4,591.23	455.52	341.02	5,387.77
Sumpter	Baker	15,081.92	881.12	820.99	16,784.03
Sutherlin	Douglas	115,742.81	17,916.99	17,556.60	151,216.40
Sweet Home	Linn	181,996.39	26,617.57	26,208.60	234,822.56
Taft	Lincoln	19,659.08	3,033.78	2,999.78	25,692.64
Talent	Jackson	40,888.73	5,818.12	5,652.21	52,359.06
The Dalles	Wasco	471,325.32	70,790.80	71,047.42	613,163.54
Tillamook	Tillamook	202,179.46	27,764.45	26,972.76	256,916.67
Toledo	Lincoln	143,567.30	18,961.62	18,945.97	181,474.89
Troutdale	Multnomah	26,572.11	3,276.35	3,182.92	33,031.38
Tualatin	Washington	15,678.32	2,217.29	2,084.06	19,979.67
Turner	Marion	34,971.67	4,977.16	5,052.26	45,001.09
Umatilla	Umatilla	44,356.73	5,785.62	5,620.64	55,762.99
Union	Union	81,018.42	8,886.45	8,633.05	98,537.92
Vale	Malheur	85,831.68	8,721.66	8,430.96	102,984.30
Vernonia	Columbia	88,491.48	9,887.55	9,605.61	107,984.64
Waldport	Lincoln	40,136.36	4,510.85	4,420.73	49,067.94
Wallowa	Wallowa	60,488.21	6,858.23	6,662.67	74,009.11
Warrenton	Clatsop	112,415.71	12,394.86	12,125.43	136,936.00
Wasco	Sherman	18,370.74	2,112.72	2,052.48	22,535.94
Waterloo	Linn	6,702.62	1,213.59	1,231.49	9,147.70
West Linn	Clackamas	163,757.27	23,623.80	23,366.71	210,747.78
Weston	Umatilla	39,510.59	4,806.98	4,704.91	49,022.48
Wheeler	Tillamook	16,785.28	1,885.20	1,831.44	20,501.92
Willamina	Yamhill	60,068.78	6,941.02	6,631.09	73,640.89
Winston	Douglas	39,795.35	16,071.43	15,725.16	71,591.94
Woodburn	Marion	143,771.14	17,696.75	17,367.15	178,835.04
Wood Village	Multnomah	39,880.46	5,229.61	5,146.99	50,257.06
Yamhill	Yamhill	29,622.72	3,297.18	3,157.66	36,077.56
Yoncalla	Douglas	31,987.42	4,615.49	4,483.88	41,086.79
Total Amounts Disbursed		$41,034,531.14	$ 5,498,421.43	$ 5,424,880.50	$51,957,833.07
Amounts Withheld*		2,375,000.00	250,000.00	250,000.00	2,875,000.00
Total Apportionment		$43,409,531.14	$ 5,748,421.43	$ 5,674,880.50	$54,832,833.07

* The 1947 law provided for the withholding of $250,000 annually from the cities' share of highway income to be expended by the State Highway Commission upon streets not a part of the state highway system which are receiving excessive wear through increased or unusual use.

Table No. 27

CITY ALLOTMENT PROJECT EXPENDITURES
Years 1948 to 1957, Inclusive

In this table are given the amounts of city allotment funds expended for projects upon city streets not a part of the state highway system which are receiving excessive wear through increased or unusual use. Beginning with 1948 an amount of $250,000 has been withheld annually from the cities' share of motor vehicle revenues for financing these projects.

City	City Allotment Funds	Amounts Contributed By Cities	Total Amounts Expended
Adams	$ 11,360.05	$	$ 11,360.05
Amity	28,534.31	12,572.28	41,106.59
Bandon	917.26		917.26
Bay City	21,626.58	17.63	21,644.21
Beaverton	16,961.35		16,961.35
Brookings	30,000.00	18,044.39	48,044.39
Brownsville	54,928.72	18,032.03	72,960.75
Burns	34,179.20	3,177.00	37,356.20
Canby	17,246.18	3,000.00	20,246.18
Canyonville	10,717.26		10,717.26
Carlton	29,732.32	1,728.15	31,460.47
Cave Junction	4,980.09		4,980.09
Central Point	11,992.40		11,992.40
Chiloquin	12,453.56		12,453.56
Coquille	26,867.24		26,867.24
Condon	14,990.30	5,464.63	20,454.93
Cornelius	26,108.13		26,108.13
Cottage Grove	11,189.08		11,189.08
Cove	18,912.66		18,912.66
Culver	15,000.00	30.17	15,030.17
Dallas	28,340.47	3,000.00	31,340.47
Dayton	12,503.84		12,503.84
Detroit	6,833.96		6,833.96
Drain	22,913.30		22,913.30
Dufur	13,670.48		13,670.48
Eagle Point	14,361.58		14,361.58
Eastside	9,925.21		9,925.21
Echo	7,518.26		7,518.26
Elgin	40,484.21	7,903.36	48,387.57
Empire	31,842.42	1,315.10	33,157.52
Enterprise	36,921.90	15,452.04	52,373.94
Falls City	14,465.92		14,465.92
Florence	24,392.05	2,032.72	26,424.77
Forest Grove	12,525.14		12,525.14
Garibaldi	3,355.08	255.30	3,610.38
Gervais	8,814.03		8,814.03
Gladstone	30,009.73	5,253.72	35,263.45
Glendale	27,196.06		27,196.06
Gold Beach	13,102.00	15,991.24	29,093.24
Gold Hill	14,391.93		14,391.93
Gresham	18,739.39	6,172.56	24,911.95
Halsey	12,781.69		12,781.69

Table No. 27—Continued

City	City Allotment Funds	Amounts Contributed By Cities	Total Amounts Expended
Harrisburg	13,636.95	4,700.00	18,336.95
Helix	15,046.71	1,324.24	16,370.95
Heppner	15,000.00	3,176.56	18,176.56
Hermiston	14,838.39	.....	14,838.39
Hillsboro	14,996.43	1,204.67	16,201.10
Hood River	4,586.83	.....	4,586.83
Hubbard	4,056.24	.....	4,056.24
Independence	26,743.29	3,081.27	29,824.56
Ione	19,227.27	.....	19,227.27
Island City	11,891.04	.....	11,891.04
Joseph	12,874.87	.....	12,874.87
Junction City	15,000.00	936.51	15,936.51
Lafayette	26,252.47	1,886.14	28,138.61
Lakeview	20,205.41	.....	20,205.41
Lebanon	14,999.47	25,163.03	40,162.50
Lexington	11,181.48	.....	11,181.48
Long Creek	11,557.38	.....	11,557.38
Lostine	14,742.68	.....	14,742.68
Madras	47,406.45	.....	47,406.45
Merrill	15,000.00	3,773.66	18,773.66
Metolius	17,070.47	.....	17,070.47
Mill City	19,707.27	.....	19,707.27
Milton-Freewater	68,176.23	11,078.61	79,254.84
Molalla	19,853.84	.....	19,853.84
Monument	14,091.00	.....	14,091.00
Mosier	3,026.22	.....	3,026.22
Mt. Angel	15,000.00	9,520.43	24,520.43
Myrtle Creek	21,316.75	3,000.00	24,316.75
Myrtle Point	50,892.25	.....	50,892.25
Newport	22,592.77	.....	22,592.77
North Powder	23,352.22	.....	23,352.22
Nyssa	38,778.43	.....	38,778.43
Oakland	42,933.20	.....	42,933.20
Oakridge	59,849.37	.....	59,849.37
Ontario	18,971.77	.....	18,971.77
Paisley	3,872.55	.....	3,872.55
Philomath	24,508.76	.....	24,508.76
Phoenix	36,069.08	3,000.00	39,069.08
Powers	7,460.87	.....	7,460.87
Prairie City	47,499.61	.....	47,499.61
Prescott	14,283.68	.....	14,283.68
Prineville	20,000.00	5,594.23	25,594.23
Redmond	18,926.65	.....	18,926.65
Reedsport	41,280.43	3,365.08	44,645.51
Riddle	54,118.76	.....	54,118.76
Rockaway	13,716.56	.....	13,716.56
Rogue River	23,431.96	.....	23,431.96
Sandy	15,007.04	42.52	15,049.56
Scappoose	8,099.65	.....	8,099.65
Scio	10,665.25	.....	10,665.25
Seaside	15,024.24	20,438.50	35,462.74
Shaniko	12,131.87	.....	12,131.87
Sheridan	14,945.24	.....	14,945.24
Sherwood	16,746.99	.....	16,746.99

Table No. 27—Continued

City	City Allotment Funds	Amounts Contributed By Cities	Total Amounts Expended
Siletz	16,307.03	.....	16,307.03
Silverton	26,524.58	4,988.56	31,513.14
St. Helens	28,475.66	8,054.99	36,530.65
Stanfield	32,037.53	7,141.75	39,179.28
Stayton	17,105.38	5,962.79	23,068.17
Sutherlin	23,376.68	.....	23,376.68
Sweet Home	46,750.22	10,274.11	57,024.33
Taft	15,601.04	2,670.00	18,271.04
Talent	23,238.60	.....	23,238.60
Tillamook	26,118.59	39,885.81	66,004.40
Toledo	23,964.47	4,800.00	28,764.47
Tualatin	15,256.38	.....	15,256.38
Turner	18,776.99	1,000.00	19,776.99
Umatilla	17,453.28	.....	17,453.28
Union	27,739.27	3,354.87	31,094.14
Vale	24,542.89	1,401.48	25,944.37
Waldport	17,536.63	.....	17,536.63
Wallowa	15,001.38	1,294.22	16,295.60
Weston	15,000.00	4,296.90	19,296.90
West Salem	18,940.69	16,054.47	34,995.16
Willamina	21,898.88	4,284.44	26,183.32
Yamhill	21,098.92	.....	21,098.92
Yoncalla	38,544.13	2,153.69	40,697.82
Totals	$2,497,718.90	$ 338,345.85	$2,836,064.75

SUMMARY OF EXPENDITURES BY YEARS

Year	City Allotment Funds Only: Receipts from Annual Allotments	Expenditures: For Construction	Expenditures: For Surveys	Expenditures: Total	Additional Funds Contributed By Cities	Total City Allotment Project Expenditures
1948	$ 250,000.00	$ 217,434.24	$	$ 217,434.24	$	$ 217,434.24
1949	375,000.00	227,994.31	6,124.98	234,119.29	58,055.11	292,174.40
1950	250,000.00	178,186.06	7,930.51	186,116.57	73,633.17	259,749.74
1951	250,000.00	296,436.21	8,248.31	304,684.52	43,205.47	347,889.99
1952	250,000.00	240,442.15	7,621.18	248,063.33	43,998.25	292,061.58
1953	250,000.00	250,770.96	8,336.76	259,107.72	14,270.77	273,378.49
1954	250,000.00	276,785.33	10,885.38	287,670.71	5,088.27	292,758.98
1955	250,000.00	285,680.56	14,624.46	300,305.02	18,233.37	318,538.39
1956	250,000.00	213,328.76	10,136.14	223,464.90	41,902.63	265,367.53
1957	250,000.00	227,754.50	8,998.10	236,752.60	39,958.81	276,711.41
Totals	$2,625,000.00	$2,414,813.08	$ 82,905.82	$2,497,718.90	$ 338,345.85	$2,836,064.75

Table No. 28

APPORTIONMENT OF MOTOR VEHICLE FEES TO COUNTIES
1920 to 1957, Inclusive

Prior to 1917, the total net revenues from motor vehicle license fees were reverted to counties; from 1917 to 1919, inclusive, the entire net fees were reverted to the state highway fund; from 1920 to January 1, 1930, inclusive, one-quarter of the net fees were apportioned to the counties and three-quarters to the state highway fund; and from January 1, 1930 to June 30, 1933, one-third of the net fees were apportioned to the counties and two-thirds to the state highway fund. The net revenues from motor transportation fees, from the beginning of the act authorizing the collection of such fees in 1927, to June 30, 1933, were apportioned one-quarter to the counties and three-quarters to state highway fund. Subsequent to June 30, 1933, the entire net revenues from both sources were deposited into the state highway fund. During the four-year period from 1933 to 1936, the counties received $1,600,000 yearly. During the ten-year period from 1937 to 1946 the yearly apportionment was increased to 15.7 per cent of the total state highway income, but to be not less than $2,000,000. Beginning with the year 1947, the yearly apportionment was again increased to 19 per cent of the total state highway income from motor vehicle fees. This table gives total apportionments to the end of the calendar year 1957.

County	Total Apportionment 1920 to 1955	Apportionment Calendar Year 1956	Apportionment Calendar Year 1957	Total Apportionment 1920 to 1957
Baker	$ 1,480,277.07	$ 114,276.45	$ 114,703.25	$ 1,709,256.77
Benton	2,141,767.69	188,658.47	192,326.26	2,522,752.42
Clackamas	5,861,773.11	567,273.07	575,978.83	7,005,025.01
Clatsop	2,298,122.67	181,287.87	173,181.45	2,652,591.99
Columbia	1,848,114.84	148,905.60	144,834.57	2,141,855.01
Coos	3,363,604.69	342,382.63	340,525.63	4,046,512.95
Crook	631,676.70	72,712.73	70,627.60	775,017.03
Curry	542,351.01	83,824.38	86,778.93	712,954.32
Deschutes	1,856,957.83	160,779.22	160,990.74	2,178,727.79
Douglas	3,785,980.24	472,477.40	469,995.80	4,728,453.44
Gilliam	346,645.64	27,479.45	26,463.91	400,589.00
Grant	667,412.22	62,247.81	59,864.27	789,524.30
Harney	547,394.74	49,473.54	47,992.12	644,860.40
Hood River	1,187,235.65	96,299.68	94,920.56	1,378,455.89
Jackson	4,840,667.76	476,623.87	484,324.85	5,801,616.48
Jefferson	360,987.61	48,583.73	50,386.37	459,957.71
Josephine	2,036,137.15	216,507.15	218,824.85	2,471,469.15
Klamath	3,851,891.68	311,548.17	312,736.70	4,476,176.55
Lake	650,519.38	56,864.17	54,757.01	762,140.56
Lane	8,617,616.39	927,921.51	929,881.18	10,475,419.08
Lincoln	1,396,201.50	146,797.61	147,669.79	1,690,668.90
Linn	3,896,004.79	379,053.45	374,159.42	4,649,217.66
Malheur	1,663,290.89	158,923.53	155,777.87	1,977,992.29
Marion	7,651,337.46	678,774.47	674,637.89	9,004,749.82
Morrow	522,892.92	43,300.40	40,857.21	607,050.53
Multnomah	37,473,262.34	3,078,509.82	3,075,615.64	43,627,387.80
Polk	1,866,286.85	156,988.97	155,598.06	2,178,873.88
Sherman	339,603.26	22,648.00	22,405.70	384,656.96
Tillamook	1,519,522.86	131,559.56	126,155.81	1,777,238.23
Umatilla	3,549,837.13	329,062.52	326,426.79	4,205,326.44
Union	1,676,008.17	127,080.61	127,566.99	1,930,655.77
Wallowa	671,124.58	57,781.10	56,802.67	785,708.35
Wasco	1,478,111.96	157,989.03	149,109.16	1,785,210.15
Washington	4,421,964.13	464,394.53	466,126.28	5,352,484.94
Wheeler	263,528.40	21,796.37	20,434.64	305,759.41
Yamhill	2,854,848.94	236,517.53	229,066.98	3,320,433.45
Totals	$118,160,960.25	$ 10,797,304.40	$ 10,758,505.78	$139,716,770.43

Table No. 29

MILEAGES OF PRIMARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
1.	Pacific	312.38	29.38	184.79	37.74			14.80	45.67
1E.	Pacific East	62.86	17.54	45.32					
1W.	Pacific West	125.14	51.89	68.87	4.38				
2.	Columbia River	202.06	0.72	96.07	88.16	17.11			
2W.	Columbia River West	98.11	23.91	70.62	3.58				
3.	Oswego	11.66	9.69	1.97					
4.	The Dalles-California	290.48	2.60	128.71	73.92	85.25			
5.	John Day	280.05		18.57	26.77	233.39	1.32		
6.	Old Oregon Trail	230.22	2.43	76.31	142.12	9.36			
7.	Central Oregon	258.20		114.49	39.75	103.96			
8.	Oregon-Washington	35.32		1.68	33.64				
9.	Oregon Coast	371.70	13.00	134.20	103.16	119.12			2.22
10.	Wallowa Lake	71.42	0.20	3.78	6.69	60.75			
11.	Enterprise-Lewiston	43.24		7.95		35.29			
12.	Baker-Homestead	77.58	0.05	0.24		43.23	34.06		
13.	Baker-Unity	46.01	0.12	9.09	15.76	21.04			
14.	Crooked River	42.51				0.89	41.62		
15.	McKenzie	111.77	0.80	10.37	24.75	75.85			
16.	Santiam	100.36		30.61	17.87	51.88			
17.	McKenzie-Bend	18.51		5.04		13.47			
18.	Willamette	86.38	0.11	52.24	25.69	8.34			
19.	Fremont	158.19		0.60	50.30	107.29			
20.	Klamath Falls-Lakeview	96.43	2.34	3.14	42.20	48.17			0.58
21.	Green Springs	59.21		5.70	10.82	42.69			
22.	Crater Lake	86.60	15.41	17.98	17.01	36.20			
23.	Dairy-Bonanza	6.97				6.97			
24.	Burns-Crane	28.91				28.91			
25.	Redwood	41.59	0.22	14.04	13.70	13.63			
26.	Mt. Hood	104.44	11.32	18.94	30.04	44.14			
27.	Alsea	58.56		18.75	0.19	39.62			
28.	Pendleton-John Day	121.94		15.27	27.66	72.00			7.01
29.	Tualatin Valley	42.43	19.30	23.13					
30.	Willamina-Salem	26.09	0.33	17.66	8.10				
31.	Albany-Corvallis	11.25	10.01	1.24					
32.	Three Rivers	24.97				24.97			
33.	Corvallis-Newport	56.05	0.57	6.96	20.31	28.21			
34.	Siuslaw	66.08		3.64	13.10	49.34			
35.	Coos Bay Roseburg	65.49	1.60	15.23	8.22	40.44			
36.	Pendleton-Cold Springs	30.88			5.22	25.15	0.51		
37.	Wilson River	51.20	0.22	32.44	3.65	14.89			
38.	Oregon Caves	19.51				19.51			
39.	Salmon River	43.61	4.99	25.87	12.75				
40.	Beaverton-Hillsdale	6.69	1.01	5.68					
41.	Ochoco	98.39		28.64		69.75			
42.	Sherman	68.61		12.13	5.86	50.62			
43.	Monmouth-Independence	2.35		2.35					
44.	Wapinitia	26.17			20.66	5.51			
45.	Umpqua	57.23	0.38	6.98	33.74	16.13			
46.	Necanicum	22.09			9.39	12.70			
47.	Sunset	75.18	3.64	54.06	13.77	3.71			
48.	John Day-Burns	67.78		20.46	9.86	37.46			
49.	Lakeview-Burns	90.02				90.02			
50.	Klamath Falls-Malin	29.04	0.11	4.36	15.71	8.86			
51.	Wilsonville-Hubbard	5.59	3.87	1.72					
52.	Heppner	84.19		0.22	0.20	83.77			
53.	Warm Springs	60.22	0.10	25.93	23.92	10.27			
54.	Umatilla Stanfield	12.58			1.30	11.28			
58.	Albany-Junction City	32.44	4.91	18.78	8.75				
59.	Sandy Boulevard	5.51	0.34	5.17					
	Totals	4,820.44	233.11	1,467.99	1,050.41	1,921.14	77.51	14.80	55.48

Table No. 30

MILEAGES OF PRIMARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage In County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	214.61	1.16	10.41	73.90	95.08	34.06		
Benton	94.76	17.60	45.01	5.73	26.42			
Clackamas	80.80	21.00	22.76	34.37	2.67			
Clatsop	106.97	17.29	46.05	30.83	12.80			
Columbia	52.80	3.78	45.44	3.58				
Coos	98.98	4.49	32.71	14.22	47.56			
Crook	84.94		15.88		31.46	37.60		
Curry	85.92	0.36	32.71	11 30	41.55			
Deschutes	201.02	0.63	79.46	50.91	66.00	4.02		
Douglas	198.59	8.90	92.61	53.12	37.71		6.25	
Gilliam	96.61		12.25	24.38	59.98			
Grant	197.72		26.42	21.55	141.42	1.32		7.01
Harney	185.59		54.64	18.63	112.32			
Hood River	70.19	0.08	27.59	1.05	41.47			
Jackson	146.91	19.04	61.48	29.02	37.37			
Jefferson	68.27		9.03	27.18	32.06			
Josephine	91.70	5.95	24.56	20.43	34.97		5.79	
Klamath	312.11	4.42	99.72	115.29	92.10			0.58
Lake	244.47		15.60	50.30	178.57			
Lane	296.31	13.62	97.10	52.62	121.79			11.18
Lincoln	133.55	1.22	36.11	51.79	44.43			
Linn	148.63	11.43	46.62	12.75	47.00			30.83
Malheur	172.13	1.44	50.68	27.59	92.42			
Marion	76.65	9.69	66.96					
Morrow	105.17		16.61	24.50	64.06			
Multnomah	127.01	36.90	60.65	23.04			2.76	3.66
Polk	69.40	5.79	37.57	24.91	1.13			
Sherman	63.57		12.13	9.71	41.73			
Tillamook	130.53	1.91	40.03	43.04	43.33			2.22
Umatilla	243.42		41.73	123.49	77.69	0.51		
Union	78.30	0.20	27.74	26.01	24.35			
Wallowa	81.58		9.52	0.37	71.69			
Wasco	186.99	0.10	44.56	41.97	100.36			
Washington	103.56	11.60	89.13	2.83				
Wheeler	99.53		12.76		86.77			
Yamhill	71.15	34.51	23.76		12.88			
Totals	4,820.44	233.11	1,467.99	1,050.41	1,921.14	77.51	14.80	55.48

Table No. 31

MILEAGES OF SECONDARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage In County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	70.75			0.61	29.51	40.63		
Benton	28.44		0.13	6.12	18.11	4.08		
Clackamas	106.41	3.51	40.28	10.31	52.31			
Clatsop	49.67	11.83	8.25	1.92	21.81			5.86
Columbia	41.88	1.06	5.36	8.02	27.44			
Coos	55.56	1.24	9.30	1.75	39.16	4.11		
Crook	87.54		24.73		39.77	23.04		
Curry	6.33				0.13	6.20		
Deschutes	53.37		0.56		52.81			
Douglas	138.10	9.88	48.42		62.46	17.34		
Gilliam	40.45		0.04		19.64	20.77		
Grant	40.23				34.35	5.88		
Harney	119.56				41.18	78.38		
Hood River	20.65	3.20	0.71	1.34	15.40			
Jackson	98.94		27.13	11.41	44.20	16.20		
Jefferson	27.94				27.94			
Josephine	45.37		3.23		42.14			
Klamath	133.17		4.16	0.07	106.72	22.22		
Lake	45.87		7.04		21.15	17.68		
Lane	161.13	10.06	56.65	5.09	33.96	33.64	7.65	14.08
Lincoln	44.98		2.66	5.55	15.02	21.75		
Linn	101.92	0.26	22.87	11.32	54.20		5.32	7.95
Malheur	230.98		72.60	18.71	130.62	3.17		5.88
Marion	146.99	1.95	101.90		38.90			4.24
Morrow	73.94				63.97	9.97		
Multnomah	54.41	14.84	39.33					0.24
Polk	49.82		11.67	0.70	37.45			
Sherman	40.04				21.43	18.61		
Tillamook	18.59	1.51	0.10	0.15	7.32	9.51		
Umatilla	126.13		10.43	0.41	87.03	11.12		17.14
Union	115.91		1.61	10.67	79.72	23.21		0.70
Wallowa	36.59		8.21		6.94	21.44		
Wasco	48.13		16.72		16.34	15.07		
Washington	67.49	0.20	15.78	0.28	51.23			
Wheeler	61.23				0.63	60.60		
Yamhill	69.41	4.58	11.75	0.58	51.04			1.46
Totals	2,657.92	64.12	551.62	95.01	1,392.03	484.62	12.97	57.55

Table No. 32

MILEAGES OF SECONDARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement: Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
102.	Nehalem	84.87	11.13	25.48	8.41	39.85			
103.	Fishhawk Falls	5.86							5.86
104.	Fort Stevens	4.53	1.76	2.41	0.36				
105.	Warrenton	1.55			1.17	0.38			
110.	Mist-Clatskanie	11.89		0.12		11.77			
120.	Swift	2.94	1.92	1.02					
122.	Vancouver Avenue	0.50	0.50						
123.	Northeast Portland	18.74	6.64	12.10					
124.	Sun Dial	1.21		1.21					
125.	Crown Point	23.79		23.79					
130.	Little Nestucca	9.51					9.51		
131.	Netarts	9.08	1.51	0.10	0.15	7.32			
140.	Hillsboro-Silverton	52.25	0.41	33.92		17.92			
141.	Beaverton-Tualatin	12.96		0.94		12.02			
142.	Farmington	9.92		0.44		9.48			
143.	Scholls	12.40			0.28	12.12			
150.	Salem-Dayton	21.08	0.03	0.43	0.35	20.27			
151.	Yamhill-Newberg	11.55	0.57	3.76		7.22			
152.	Three Mile Lane	7.85	0.30	3.66		2.43			1.46
153.	Bellevue-Hopewell	14.49			0.06	14.43			
154.	Lafayette	6.36			0.52	5.84			
155.	Amity-Dayton	9.38	2.42			6.96			
156.	McMinnville	1.80	1.05	0.75					
160.	Cascade	44.70	8.69	19.60		16.17			0.24
161.	Woodburn-Estacada	33.51	0.63	4.66	4.82	23.40			
162.	North Santiam	81.74		48.78		28.72			4.24
163.	Silver Creek Falls	40.92	1.31	11.23		28.38			
164.	Jefferson	8.45	0.55	7.90					
170.	Canby-Marquam	8.02	0.22			7.80			
171.	Clackamas	24.16		22.53		1.63			
172.	Eagle Creek-Sandy	5.94				5.94			
173.	Timberline	5.49			5.49				
180.	Eddyville-Blodgett	19.29				7.57	11.72		
181.	Siletz	31.70		1.91	5.55	14.21	10.03		
182.	Otter Rock	0.75		0.75					
189.	Dallas-Rickreall	4.74		4.39	0.35				
191.	Kings Valley	28.06		3.01	6.12	18.93			
192.	Dolph Corner-Dallas	2.89				2.89			
193.	Independence	6.42		3.45		2.97			
194.	Monmouth	7.59		0.39		7.20			
200.	Territorial	45.89		22.73		14.21	8.95		
201.	Alsea-Deadwood	29.14				5.61	23.53		
210.	Corvallis-Eastside	10.19		0.89		9.30			
211.	Albany-Lyons	24.41		10.70	11.32	2.39			
212.	Halsey-Sweet Home	21.50		9.33		12.17			
213.	Mehama-Mill City	8.97	0.10	0.43		8.44			
214.	Albany Airport	1.07				1.07			
215.	Clear Lake-Belknap Springs	21.00						11.05	9.95
220.	Richardson-Eugene	36.88	0.15	5.83	5.09	15.62	10.19		
222.	Springfield-Creswell	14.88	0.44	2.73		6.16		1.92	3.63
223.	Junction City-Eugene	13.65	0.70	12.95					
225.	McVay	1.56		1.56					
226.	Goshen-Divide	19.91	8.77	11.14					
227.	Eugene-Springfield	8.45							8.45
230.	Tiller Trail	52.74		7.84	11.11	33.79			
231.	Elkton-Sutherlin	28.09		8.36		7.34	12.39		
232.	Crater Lake—North	5.29				5.29			
233.	West Diamond Lake	23.89		9.00		14.89			
234.	Oakland-Shady	22.26	9.88	12.38					
235.	Dillard	8.51		8.51					
236.	Drain-Yoncalla	8.06		8.06					
240.	Cape Arago	14.21	0.22	1.78		12.21			
241.	Coos River	19.15	0.74	3.94	1.75	8.61	4.11		
242.	Powers	18.62	0.28			18.34			
243.	Empire-Coos Bay	3.58		3.58					
250.	Cape Blanco	5.54					5.54		

Table No. 32—Continued

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
251.	Port Orford	0.79				0.13	0.66		
260.	Rogue River Loop	22.27		3.23		19.04			
261.	Williams	23.09				23.09			
270.	Little Butte	30.63			0.30	14.13	16.20		
271.	Sams Valley	18.39		2.76		15.63			
272.	Medford-Provolt	25.02		10.74		14.28			
273.	Siskiyou	7.61		7.61					
281.	Hood River	17.28	2.42	0.71	1.34	12.81			
282.	Odell	3.37	0.78			2.59			
290.	Sherars Bridge	28.44				28.44			
291.	Shaniko-Fossil	43.45				8.65	34.80		
292.	Mosier-The Dalles	16.72		16.72					
300.	Wasco-Heppner	88.33		0.04		48.91	39.38		
301.	Fulton Canyon-Wasco	1.28				1.28			
320.	Lexington-Echo	39.53				39.53			
321.	Heppner-Spray	40.96				14.78	26.18		
330.	Weston-Elgin	40.84		2.50		38.34			
331.	Umatilla Mission	4.79					4.79		
332.	Sunnyside-Umapine	7.25				7.25			
333.	Hermiston	17.93		1.28		16.65			
334.	Athena-Holdman	16.23		0.19		16.04			
335.	Havana-Helix	9.79		1.00		8.79			
338.	Ordnance Depot	0.41			0.41				
339.	Freewater	5.46		5.46					
340.	Medical Springs	42.57				42.57			
341.	Ukiah-Hilgard	47.38					29.54		17.84
342.	Cove	22.09				22.09			
343.	La Grande-North Powder	27.97		1.61	11.28	15.08			
350.	Little Sheep Creek	29.65		8.21			21.44		
351.	Joseph-Wallowa Lake	6.94				6.94			
360.	Madras-Prineville	26.28				26.28			
361.	Culver	11.64				11.64			
370.	O'Neil	17.67				17.67			
371.	Powell Butte	18.02				18.02			
372.	Century Drive	11.65		0.56		11.09			
373.	Cline Falls	10.32				10.32			
374.	Tumalo-Deschutes	3.85				3.85			
375.	Redmond-Bend	13.26				13.26			
380.	Paulina	56.16		24.73		8.39	23.04		
390.	Service Creek-Mitchell	24.69				0.03	24.66		
401.	Beech Creek	5.35				5.35			
402.	Kimberly-Long Creek	34.88				29.00	5.88		
410.	Sumpter Valley	22.70				4.04	18.66		
411.	Haines-Anthony	12.60					12.60		
413.	Halfway-Cornucopia	11.45				5.75	5.70		
414.	Pine Creek	3.72				0.05	3.67		
420.	Midland	5.69		3.55		2.14			
421.	Klamath Lake	48.28		0.61	0.07	25.38	22.22		
422.	Chiloquin	9.77				9.77			
423.	Lower Klamath	7.02				7.02			
424.	Sand Creek	4.23				4.23			
425.	East Diamond Lake	14.72				14.72			
426.	Hatfield	2.51				2.51			
427.	Modoc Point	12.90				12.90			
428.	Sun Mountain	26.98				26.98			
429.	Crescent Lake	2.39				2.39			
431.	Warner	45.87		7.04		21.15	17.68		
440.	Frenchglen	60.26				8.54	51.72		
441.	Diamond	26.66					26.66		
442.	Crane-Scotts Butte	63.42				63.42			
450.	Nyssa-Adrian	22.24		12.09		10.15			
451.	Vale-West	10.73		0.04		10.69			
452.	Adrian-Parma	2.77				2.77			
453.	Adrian-Arena Valley	3.19				2.26	0.93		
454.	Adrian-Caldwell	5.09				2.85	2.24		
455.	Olds Ferry-Ontario	28.95		6.48	18.71	3.76			
456.	I. O. N.	116.81		53.99		56.94			5.88
458.	Jordan Valley	10.42				10.42			
	Totals	2,657.92	64.12	551.62	95.01	1,392.03	484.62	12.97	57.55

Table No. 33

MILEAGES OF COUNTY AND OTHER LOCAL ROADS

County road mileages include urban extensions in the county system.

Class of Roads and County	Total Mileage	Miles of Different Types of Improvement		
		Concrete and Bituminous Pavement	Rock Surfacing	Open For Travel But not Surfaced
County Roads				
Baker	903	18	556	329
Benton	463	100	306	57
Clackamas	1,395	707	657	31
Clatsop	218	140	73	5
Columbia	500	194	293	13
Coos	595	166	341	88
Crook	554	52	276	226
Curry	187	11	171	5
Deschutes	1,332	240	67	1,025
Douglas	992	315	662	15
Gilliam	478	45	303	130
Grant	503	6	172	325
Harney	1,306	.....	208	1,098
Hood River	199	62	109	28
Jackson	923	320	489	114
Jefferson	764	20	538	206
Josephine	372	168	202	2
Klamath	835	356	244	235
Lake	1,551	24	263	1,264
Lane	1,287	363	903	21
Lincoln	374	40	268	66
Linn	1,118	282	811	25
Malheur	2,042	17	341	1,684
Marion	1,145	560	576	9
Morrow	1,006	71	551	384
Multnomah	740	665	58	17
Polk	511	98	399	14
Sherman	473	17	335	121
Tillamook	286	166	118	2
Umatilla	1,558	269	728	561
Union	588	55	373	160
Wallowa	654	12	382	260
Wasco	754	78	474	202
Washington	1,044	508	516	20
Wheeler	407	7	124	276
Yamhill	732	107	582	43
Totals, county roads	28,789	6,259	13,469	9,061
National forest roads	16,197	119	4,601	11,477
National park roads	204	76	6	122
BLM roads	2,586	32	1,424	1,130
Military reservation roads	10	6	4	.....
Indian reservation roads	1,264	4	154	1,106
Non-highway city streets	4,524	2,487	1,390	647
Totals, all roads other than state highways	53,574	8,983	21,048	23,543

Table No. 34

SPECIAL SERVICES COMPENSATION

Statement published in accordance with the requirements of ORS 291.570 showing payments for special services by the State Highway Department during the biennial period July 1, 1956 to June 30, 1958.

Name and Address	Nature of Service	Amount
Ambrose, A. Norris, Portland	Appraisals and expenses	$ 25.00
Anderson, Philo, H., Baker	Appraisals and expenses	826.72
Baldwin, Edwart M., Eugene	Geological survey	75.00
Bartlett, F. A., Portland	Witness fees and expenses	50.00
Baumback, A. C., Sandy	Moving estimates	150.00
Berry and Thomas, La Grande	Appraisals and expenses	282.60
	Preparation for trial, witness fees and expenses	150.00
Billings, John S., Ashland	Witness fees and expenses	100.00
Bisholberger, James A., Portland	Expert witness fees and expenses	203.80
Blackaby, Earl, Eugene	Appraisals and expenses	60.00
Blinkhorn Realty Co., Eugene	Appraisals and expenses	525.00
	Witness fees and expenses	49.00
Boyer, Arthur, Roseburg	Expert drainage engineer services	50.00
Brelage, Herman Realty Co., North Bend	Preparation for trial, witness fees and expenses	500.00
Brewster, Scholz and Burnett, Portland	Appraisals and expenses	2,035.00
Brooke, R. E., Ontario	Appraisals and expenses	470.00
	Preparation for trial, witness fees and expenses	504.70
Burt, C. B., Portland	Moving estimates	200.00
	Well drilling estimate	25.00
Calloway, A. F., Newberg	Witness regarding family records	100.10
Charlton Laboratories, Inc., Portland	Soil tests	90.00
Chilcote, E. M., Klamath Falls	Appraisals and expenses	2,275.00
Coats, Edward C., Grants Pass	Appraisals and expenses	1,245.00
	Preparation for trial, witness fees and expenses	125.00
Cofer, Eugene, Portland	Trial witness	10.00
Columbia Aerial Surveys, Boise, Idaho	Aerial photography	342.52
Colwell, Elmer T., Portland	Appraisals and expenses	50.00
Coppock, R. H., Salem	Appraisals and expenses	1,075.00
	Preparation for trial, witness fees and expenses	50.00
Cougill Realty Co., Eugene	Appraisals and expenses	615.00
Courtney, Eugene, The Dalles	Appraisals and expenses	408.70
	Preparation for trial, witness fees and expenses	133.80
Currin, Robert W., Pendleton	Appraisals and expenses	190.00
"D" Realty Co., Ontario	Appraisals and expenses	230.00
	Preparation for trial, witness fees and expenses	94.76
Dean Johnson, Inc., McMinnville	Aerial photography	125.00
Delano Aerial Surveys, Portland	Expert witness, aerial photography	1,866.03
Dent and Fussell, Salem	Appraisals and expenses	50.00
Dinsdale, T. M., Portland	Expert consultant on service station construction	600.00

Table No. 34—Continued

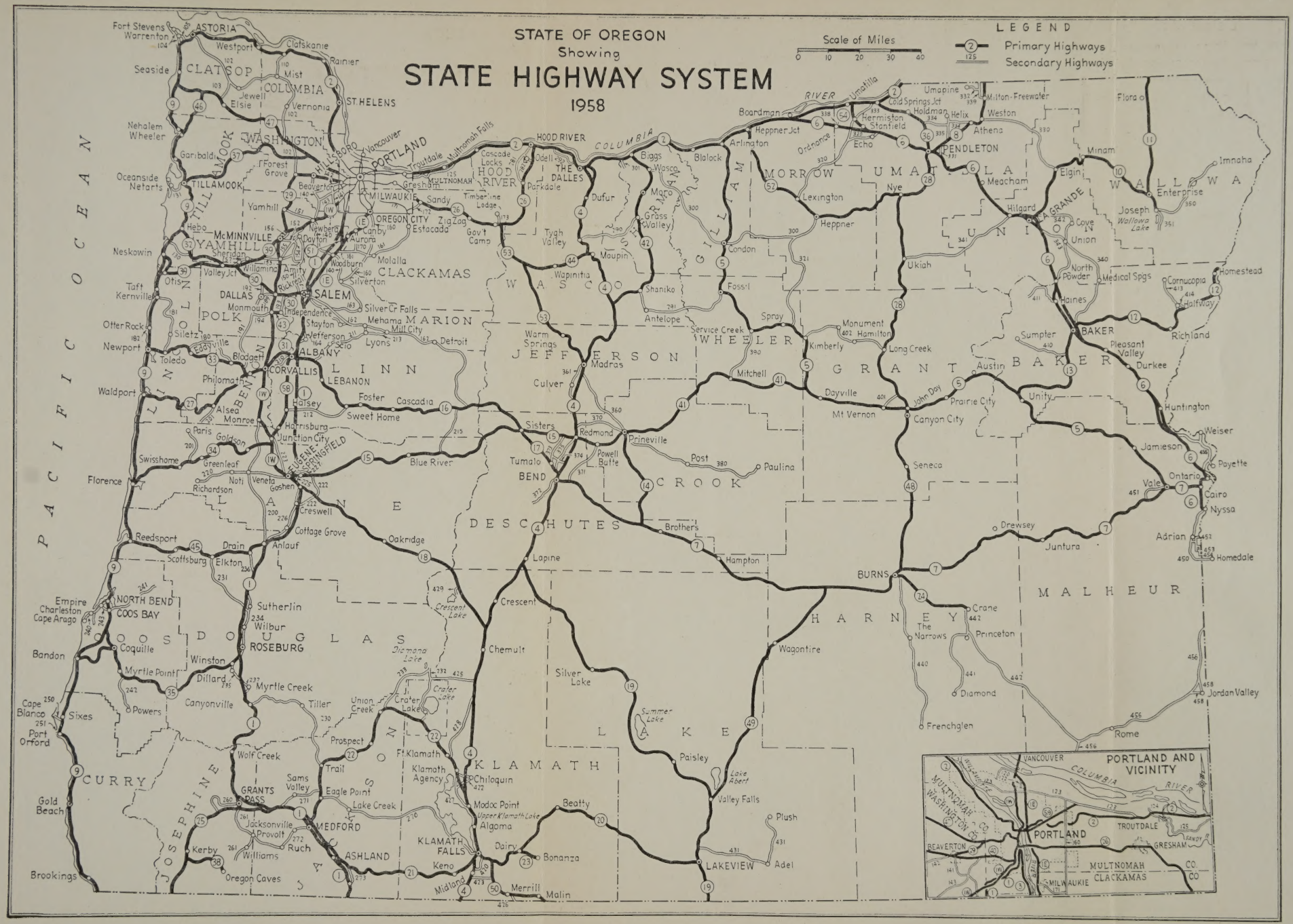
Name and Address	Nature of Service	Amount
Dryer, H. A. Co., Portland	Appraisal and expenses	26,125.00
	Preparation for trial, witness fees and expenses	9,800.00
Dudrey, Hilton, Bend	Appraisals and expenses	31.10
Ek, E. W., Portland	Appraisals and expenses	3,985.00
	Preparation for trial, witness fees and expenses	550.00
Felthouse, W. W., Walla Walla	Appraisals and expenses	1,058.60
	Preparation for trial, witness fees and expenses	65.00
Fitzpatrick, Joe, North Bend	Appraisals and expenses	625.00
Fletcher Sand & Gravel Co., Pendleton	Expert witness	50.00
Gander, Dwight H., Portland	Appraisals and expenses	40.00
Geiser, Peter, Forest Grove	Appraisals and expenses	85.00
General Appraisal Co., Portland	Appraisals and expenses	200.00
	Preparation for trial, witness fees and expenses	700.00
Gilkey, J. S., Dayton	Appraisals and expenses	550.00
Gustafson, Edw. F., Portland	Appraisals and expenses	200.00
Hamlin-Shockley, Springfield	Appraisals and expenses	1,100.00
Hansen and Glass, Eugene	Appraisals and expenses	490.00
Harris, E. Lynn, Eugene	Appraisals and expenses	2,946.50
	Preparation for trial, witness fees and expenses	900.00
Hatfield, Jim, Salem	Appraisals and expenses	475.00
Heberling, W. A., Scappoose	Appraisals and expenses	340.00
Henry, Ernest E., Portland	Appraisals and expenses	1,594.00
Hickson, Robert E., Portland	Engineering consultant, trial witness and expenses	1,474.04
Holbrook-Walstrom, Portland	Appraisal and expenses	13,806.30
	Preparation for trial, witness fees and expenses	3,900.00
Hodges, Stroble Agency, Pendleton	Appraisals and expenses	120.00
Holman, K. J., Bend	Auctioneering services	41.82
Humphries, Jones and Templeton, Portland	Associate Legal Counsel	800.00
Hyde, Clarence, Eugene	Appraisals and expenses	200.00
Jeffers, W., La Grande	Appraisal of equipment and expenses	200.00
Jones, Mrs. Archie, Prineville	Appraisal of furniture and expenses	554.79
Kelsey Realtors, Redmond	Appraisals and expenses	910.05
	Preparation for trial, witness fees and expenses	614.76
Kerr Realty Co., Bend	Appraisals and expenses	270.75
	Preparation for trial, witness fees and expenses	195.65
Kilgore, Claude, Salem	Auctioneering services	400.00
Kudrna, Donald, Ontario	Appraisals and expenses	891.00
	Preparation for trial, witness fees and expenses	200.06
Laidlow, W. R., Portland	Preparation for trial, witness fees and expenses	100.00
Landon, M. M., Sweethome	Preparation for trial, witness fees and expenses	106.50
Larson, A. A., Salem	Appraisals and expenses	1,195.00
Lebeck and Sons, Portland	Expert witness on moving expenses	140.00

Table No. 34—Continued

Name and Address	Nature of Service	Amount
Leckington, Wm. E., Tillamook	Moving estimate	25.00
Libby, Hollis W., Salem	Engineering services	107.50
Lincoln, Irving, Portland	Preparation for trial, witness fees and expenses	1,000.00
Lorsung, John, Hillsboro	Moving estimate	25.00
Luhr, Alvin, Salem	Appraisal of equipment	162.90
Lusk, Paul B., Portland	Appraisal and expenses	525.00
	Witness fees and expenses	37.50
McAllister, Paul, Portland	Expert witness and expenses	24.81
Macklin, J. Hoover, Seattle	Geological services and expenses	169.58
Mason, Mrs. V. W., Albany	Moving estimate	25.00
Meinert, Leslie, Albany	Appraisal and expenses	175.00
Meyer, Harold F., Forest Grove	Appraisal and expenses	4,195.00
	Preparation for trial, witness fees and expenses	1,950.00
Miller, Vernon, Portland	Sound Technician	250.00
Morrow, Robert D., Salem	Estimate on replacing a building	150.00
Murphy, Claude, Salem	Preparation for trial, witness fees and expenses	1,300.00
Murphy, Eugene, Portland	Appraisals and expenses	525.00
Myers, Maurice E., Eugene	Mechanical Engineer's Service and expenses	18.12
Pacific Realty Co., Eugene	Appraisals and expenses	125.00
Pattee, Jack W., Portland	Appraisals and expenses	100.00
Peoples, Don H., Bend	Appraisals and expenses	180.10
	Preparation for trial, witness fees and expenses	112.04
Peterson, Carl, Portland	Witness fees and expenses	30.00
Pittsburg Testing Laboratories, Portland	Chemical analysis	407.55
Porter, Horace, Portland	Appraisals and expenses	550.00
	Preparation for trial, witness fees and expenses	200.00
Potter Lumber Co., Saginaw	Expert witness	100.00
Rainbow Construction Co., Salem	Moving estimate	25.00
Ramsey, Keith, Bend	Expert witness	73.95
Rawlings Realty Company, Salem	Appraisals and expenses	3,575.00
	Preparation for trial, witness fees and expenses	820.00
Real Property Appraisals, Portland	Appraisals and expenses	260.00
Reese, John, Portland	Architectural services	248.00
Richter, R. L., Roseburg	Expert witness on Mill operation	150.00
Rinehart Real Estate, Delake	Appraisals and expenses	300.00
Rodman and Urey, Eugene	Appraisals and expenses	25,945.00
	Preparation for trial, witness fees and expenses	4,215.00
Roseburg Realty Co., Roseburg	Appraisals and expenses	3,440.00
	Preparation for trial, witness fees and expenses	100.00
Ruzek, C. V., Corvallis	Geological survey and witness fees	656.20
Schee, Raymond, Prineville	Appraisals and expenses	806.73
	Preparation for trial, witness fees and expenses	606.89
Schumacher, Ray, Medford	Trial witness fees and expenses	200.00

Table No. 34—Continued

Name and Address	Nature of Service	Amount
Siegmund, Floyd L., Salem	Surveying services	40.00
Silani-Fisher Realty, Klamath Falls	Appraisals and expenses	1,600.00
	Preparation for trial, witness fees and expenses	100.00
Smith, H. G., Salem	Engineering advice and court testimony	1,277.70
Snyder, Creighton, Portland	Expert witness and expenses	150.00
Staples, Lloyd, Eugene	Geological survey and expenses	1,134.80
Stevens Realtors, Tillamook	Appraisals and expenses	40.00
	Preparation for trial, witness fees and expenses	100.00
Stewart, W. A., Baker	Appraisals and expenses	253.33
Stillwell, Bob, Dayton	Trial witness and expenses	45.00
The Signature Co., New York	Bond service	360.24
Trader Bill, La Grande	Equipment appraisal	35.00
Trowbridge, Carl R., Portland	Appraisals and expenses	8,237.50
	Preparation for trial, witness fees and expenses	852.15
Tsugawa, Henry, Portland	Trial witness and expenses	60.00
Tunturi, Archie R., Portland	Architectural and acoustics consultant	3,930.00
U. S. Appraisal Company, Seattle	Appraisals and expenses	162.75
Valentine, Ralph, Salem	Expert witness and expenses	100.00
Vandagrieft-Leever Agency, Medford	Appraisals and expenses	395.00
Van Hine, Richard, Newport	Expert witness	81.21
Walkons, Chas., Grand Rapids, Michigan	Expert on garnetting equipment	200.00
Western Aerial Contractors, Eugene	Aerial photography	1,040.50
Western Ways, Corvallis	Aerial photography	603.13
Wievesiek and Tripp, Oregon City	Appraisals and expenses	995.00
	Preparation for trial, witness fees and expenses	700.00
Wilcox Drilling Co., McMinnville	Testing of well water	17.50
Wilcox, H. C., McMinnville	Preparation for trial, witness fees and expenses	175.00
Winfree, McCulloch, Shuler & Sayre, Portland	Legal counsel concerning bond issues	6,000.00
Wood, Carl, Corvallis	Estimate on replacing building, and Court testimony and expenses	340.00
Woodward, Draper and Stepp, Portland	Appraisals and expenses	13,842.47
	Preparation for trial, witness fees and expenses	5,028.63
Wright, Clyde, Eugene	Appraisals and expenses	187.45
	Preparation for trial, witness fees and expenses	43.95
Young, F. L., West Linn	Engineering advice and service	83.00


STATE OF OREGON
Showing
STATE HIGHWAY SYSTEM
1958
Scale of Miles
0 10 20 30 40
LEGEND
Primary Highways
Secondary Highways
PACIFIC OCEAN
ASTORIA
Fort Stevens
Warrenton
Westport
Clatskanie
Rainier
Seaside
CLATSOP
COLUMBIA
Mist
Jewell
Elsie
Vernonia
ST. HELENS
Nehalem
Wheeler
WASHINGTON
Garibaldi
Forest Grove
HILLSBORO
Vancouver
PORTLAND
Troutdale
Multnomah Falls
Oceanside
Netarts
TILLAMOOK
Beaverton
Gresham
MULTNOMAH
HOOD RIVER
Cascade Locks
Odell
THE DALLES
COLUMBIA
Parkdale
Dufur
Biggs
Wasco
Blalock
Boardman
Heppner Jct
Arlington
Umapine
Milton-Freewater
Flora
Cold Springs Jct
Hermiston
Stanfield
Holdman
Helix
Weston
Athena
PENDLETON
Echo
Umatilla
RIVER
Minam
Imnaha
Elgin
Enterprise
WALLOWA
Yamhill
MILWAUKIE
Sandy
Timberline Lodge
Maro
Grass Valley
Meacham
Nye
Lexington
Heppner
MORROW
UMATILLA
Hebo
McMINNVILLE
YAMHILL
Newberg
Dayton
Canby
OREGON CITY
Zig Zag
Estacada
Gov't Camp
Tygh Valley
Hilgard
GRANDE RONDE
Joseph
Wallowa Lake
Cove
Union
UNION
Neskowin
Sheridan
Willamina
Amity
Woodburn
Molalla
CLACKAMAS
Maupin
Condon
Ukiah
Otis
Valley Jct
Silverton
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DALLAS
SALEM
Monmouth
Independence
Silver Cr Falls
Haines
Halfway
POLK
MARION
Stayton
Mehama
Mill City
Detroit
Antelope
Service Creek
Spray
Monument
Hamilton
Sumpter
BAKER
Richland
Otter Rock
Siletz
Jefferson
Lyons
Warm Springs
JEFFERSON
WHEELER
Kimberly
Long Creek
Pleasant Valley
Newport
Eddyville
Toledo
Blodgett
ALBANY
CORVALLIS
LEBANON
Madras
Mitchell
Austin
GRANT
BAKER
Durkee
Waldport
Philomath
Culver
Dayville
Prairie City
Unity
Huntington
Alsea
Monroe
Harrisburg
Junction City
Foster
Cascadia
Sweet Home
Sisters
Redmond
Prineville
Mt Vernon
John Day
Canyon City
Weiser
Jamieson
Paris
Goldson
Swisshome
Greenleaf
Blue River
Tumalo
Powell Butte
Post
Paulina
Seneca
Payette
Ontario
Vale
Florence
Noti
Veneta
Goshen
Richardson
BEND
CROOK
Cairo
Nyssa
LANE
EUGENE
SPRINGFIELD
Creswell
Cottage Grove
DESCHUTES
Oakridge
Brothers
Drewsey
Juntura
Adrian
Homedale
Reedsport
Drain
Anlauf
Scottsburg
Elkton
Lapine
Hampton
BURNS
MALHEUR
Empire
Charleston
Cape Arago
NORTH BEND
COOS BAY
Sutherlin
Wilbur
ROSEBURG
Crescent
Crescent Lake
Chemult
Wagontire
Crane
The Narrows
Princeton
HARNEY
Coquille
Bandon
DOUGLAS
Diamond Lake
Silver Lake
Myrtle Point
Winston
Dillard
Myrtle Creek
Crater Lake
Summer Lake
Diamond
Jordan Valley
Cape Blanco
Sixes
Powers
Canyonville
Tiller
Union Creek
LAKE
Frenchglen
Port Orford
Prospect
Wolf Creek
Ft Klamath
Paisley
Rome
CURRY
Trail
Klamath Agency
KLAMATH
Chiloquin
Lake Abert
Gold Beach
Sams Valley
Eagle Point
GRANTS PASS
Lake Creek
Modoc Point
Upper Klamath Lake
Beatty
Valley Falls
Plush
JOSEPHINE
Jacksonville
MEDFORD
Algoma
Provolt
Ruch
Kerby
Williams
ASHLAND
KLAMATH FALLS
Dairy
Bonanza
LAKEVIEW
Adel
Brookings
Oregon Caves
Keno
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Merrill
Malin
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